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ABSTRACT

MICRO-U is a student demand driven deterministic model. Student enrollment, by degree program, is used to develop an Instructional Work Load Matrix. Linear equations using Weekly Student Contact Hours (WSCH), Full Time Equivalent (FTE) students, FTE faculty, and number of disciplines determine library, central administration, and physical plant costs. The Instructional Work Load Matrix is used to develop the number of sections, the number of faculty, the number of support personnel, instructional supplies, office supplies, and travel expense. The costs are developed for departments, distributed to disciplines, allocated to degree programs, and used to compute per unit costs for WSCH, degree program FTE, and FTE students. All computations are performed for 1 to 5 cases, each using the previous case as the base or default data. Thus, alternative cases for a single year or a 5-year incremental case is possible. The report program provides the following reports: Departmental Data and Resource Requirements, Budget Projections, Budget Projections by Discipline, Project Discipline Costs per WSCH, Degree Program Budget Report by Discipline, Annual Cost per Student by Degree Program, and Degree Program Budget Report by Expenditure Type. Operating instructions for the IBM system 360F and program listings are included in the manual. (Author/HS)

ED 062 926

MICRO-U 70.1
Training Model of an Instructional Institution, Users Manual

An instructional simulation tool designed for WICHE Training Seminars

Technical Report 10

HE 002 225

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- to increase educational opportunities for westerners;
- to expand the supply of specialized manpower in the West;
- to help universities and colleges improve both their programs and their management;
- to inform the public about the needs of higher education.

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MICRO-U 70.1: Training Model of an Instructional Institution, Users Manual

Technical Report 10

by

Colby H. Springer

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Western Interstate Commission for Higher Education
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PREFACE

Institutions of higher education are complex, and representation of the underlying economic processes is difficult. In order to express some of the concepts of management of these institutions, it is necessary to understand some of the more complex representations or models of these processes. After considering the alternative teaching methods for management training seminars, Dr. Robert Huff, Director of Training, WICHE Management Information Systems Program, elected to use a training model. MICRO-U was created to conceptually parallel the more sophisticated planning tools for instructional institutions, but at the same time reduce the scope so that seminar participants could readily identify and understand the underlying concepts. The computer would then absorb the burden of computation and organization and display of the data.

MICRO-U 70.1 models only the instructional function. Later versions will include departmental and organized research, differentiation between undergraduate and graduate programs, reflect revised reporting, and modify the resouce prediction equations to parallel the actual experience of colleges implementing the WICHE Resource Requirements Prediction Model 1 (RRPM-1).

In one sense, this training model represents the development and implementation of planning models and other management technology at colleges and universities. So MICRO-U can never be developed faster than the implemented technology. In another sense, this model represents an approach to the management of resources, and should be improved by the suggestions of the seminar participants. In this sense MICRO-U will reflect a consensus of how college and university administrators would like to manage if they had the information system to provide them the data necessary to use this new technology.

Hopefully, MICRO-U will serve both as an instructional tool, and create specific and substantive dialogue on management information systems for higher education.

ACKNOWLEDGEMENTS

The concept of MICRO-U as a teaching tool was developed by Dr. Robert Huff, Director of the WICHE Management Informations Systems Training Program. The model itself is based on concepts by John Keller and George Weathersby of the University of California, Roger Sisson of Mathematica, and James Farmer and Michael E. Young of the California State Colleges. The model was created under strict time limitations, and while development of the model took only two weeks, it required intense effort. I particularly appreciate the assistance of Robert Huff, Michael Young, and James Farmer who spent many late night hours pouring over the reports at the computer center looking for errors.

Carol Kanter, University of Colorado, wrote the original report programs. They have been modified both in content and format to improve the presentation.

We both appreciate the cooperation of Scott Williams of the University of Colorado, Administrative ADP Division who gave up his holidays to operate the IBM System 360/40F so that we could meet publication deadlines and IBM whose hardware and software didn't fail.

SUMMARY

MICRO-U is a set of computer programs modeling a small instructional institution. They are written in USASI FORTRAN IV for the IBM System 360F. With only minor program changes, the system will operate on any computer using FORTRAN IV. All programs are modular so that they could be run on small machines. The programs do use two tape files, but only for intermediate storage. Since only 40,000 bytes of storage would be required, disk storage can be used.

MICRO-U is a student demand driven deterministic model. Student enrollment, by degree program, is used to develop an Instructional Work Load Matrix. Linear equations using Weekly Student Contact Hours (WSCH), Full Time Equivalent (FTE) Students, FTE Faculty, and number of disciplines determine library, central administration and physical plant costs. The Instructional Work Load Matrix is used to develop the number of sections, the number of faculty, the number of support personnel, instructional supplies, office supplies, and travel expense.

These costs are developed for departments, distributed to disciplines, allocated to degree programs, and used to compute per unit costs for WSCH, degree Program FTE, and FTE Students.

All computations are performed for one to five cases, each using the previous case as the base or default data. Thus alternative cases for a single year, or a five-year incremental case is possible.

The report program provides the following reports: Department Data and Resource Requirements, Budget Projections, Budget Projections by Discipline, Project Discipline Costs per WSCH, Degree Program Budget

Report by Discipline, Degree Program Annual Costs per WSCH, Annual Cost per Student by Degree Program, and Degree Program Budget Report by Expenditure Type.

Operating instructions for the IBM System 360F and program listings are included in the manual.

I. The Model

Purpose

Planning representations of institutions become particularly complex as they attempt to represent the subtle, interrelated processes of higher education. Planning tools such as Resouce Requirement Prediction Models; Planning, Programming, and Budgeting Systems; Student Flow Models; and input/output indicators are difficult to conceptualize either as static examples or actual implementations. MICRO-U was developed as an institution having few and simple interrelationships, and small size, in order to have a planning tool which could be used in the WICHE Management Training Seminars. These limitations were intended to make conceptual grasp less difficult than actual examples. The computer model would let the seminar participant avoid the lengthy computations and permit him to interact with the model.

MICRO-U 70.1 is the first version of a computer model. Although there are many extensions which are being considered, its performance as a teaching tool has yet to be evaluated, and hence further development will be determined by its usefulness.

MICRO-U, The Institution

MICRO-U is a small teaching university. It has no more than eight academic departments teaching up to eight academic disciplines in support of as many as eight degree programs. Each department may teach one or more academic disciplines, but no discipline is taught by more than one department. Degree programs may use the resources of any of the departments. MICRO-U has a library, a physical plant, and central administration.

MICRO-U does not have a building program--there are always sufficient facilities, only maintenance must be provided. MICRO-U does not yet have a capability for organized research and does not allocate funds specifically for departmental research.

It has three faculty ranks. Salary levels, travel expense, office supplies, and instructional expense are determined for each department. The department chairman, and the support staff--administrators and secretaries, are determined for each department reflecting institutional policy and the possible part-time assignment of the department chairman to other duties.

Each discipline has an instructional policy on the average section size and the average weekly contact hours taught by an instructor. Only full time faculty are recruited.

The library maintains a collection for each discipline, and its costs are allocated to the disciplines. The cost of central administration is a function of the number of faculty members and the cost of the physical plant is a function of the number of sections taught.

The Modeling Concept

There are several general views of an institution of higher education. Some institutions offer courses of instruction based on the desired courses of the student; others offer courses which their faculty want to present; most institutions respond to both of these needs and certain historical inertia. Because of enrollment policies--few institutions have specific admissions requirements by major preference and even fewer prohibit a student from changing majors, MICRO-U is driven only by student demand. That is, all computations of instructional work load are based on the indicated degree preference of the students without any constraints of faculty considerations.

The student enrollment then induces a course load on the departments. All direct costs are computed from this specific load. Indirect costs--department overhead, library, physical plant and central administration--are computed by a resource requirements prediction model. This RRPM is a series of linear equations representing the more complex regression equations found in typical models. Indirect costs are allocated to departments (and disciplines).

Rather than represent either semesters or quarters, MICRO-U uses annual costs based on a teaching year, typically nine months.

Departments teach courses to students for degree credit. However, the number and scope of departments within a university is large, and the number of degree programs can be large. In order to provide comparative data, WICHE organizes data on both department costs and degrees by discipline division and discipline specialty. The MICRO-U model assumes that any department can teach one or more disciplines, but no single discipline is taught by more than one department. This restriction makes computation much less difficult and should not detract from the teaching potential of the model.

Similarly, degree programs are defined in terms of Weekly Contact Hours by discipline. The use of discipline numbers in the model represents the type of use a college or university would make of the taxonomy of academic disciplines.*

Conceptually, then, faculty characteristics are given by academic discipline, and the faculty is administratively under a department. This dichotomy of discipline faculty and departmental administration is carried throughout the model.

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*The Taxonomy used by the National Center of Education Statistics was revised by WICHE MIS and will be published by the U. S. Government. See Ref. 1 for proposed list.

II. Model Calculations

The Representation

To minimize confusion, departments are numbered 01 through 08, disciplines 11 through 18 and degree programs 21 through 28. All vectors and matrices have principle dimensions of 8, and subscripts will be correctly noted.

The enrollment is represented by an FTE student total and a vector of degree program ratios.* For example, if the enrollment is 132, and 0.25 are enrolled in degree program 21, then 33 FTE students are enrolled in degree program 21. Percentages were used in lieu of actual FTE students in order to facilitate later incorporation of the student flow model.

The demand of students for instructional courses is given by an induced course load matrix. Internally this is represented by the matrix ICLM where each element, ICLM (i,j)** represents the number of weekly contact hours (WCH) taken by a student in discipline i and degree program j. Thus, the sum of elements over i represents the average WCH load for a student in degree program j. There are several alternative methods of representing this preference. This representation is similar to that used by George Weathersby.*** He let:

> Each element (of the academic preference matrix PM (d)), D (i, j, k) is interpreted as the number of student credit hours (SCH) an FTE student in general subject field d at an academic level j takes in subject field i of level k.

where PM is a family of matrices.

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*A list of all variables and their FORTRAN notation are given in Appendices A1 and A2.

**The FORTRAN notation rather than the mathematical notation is used to facilitate typing and permit use of automatic reproduction equipment.

***Ref. 2, pp. 25-26.

The Induced Course Load Matrix can be seen in Figure 1. Figure 2, 3, and 4 show the other variables of the data block before any calculations.

Huff used two different representations. The first is a matrix whose elements are the total Weekly Student Contact Hours (WSCH) of degree i taught in discipline j.* Thus, a sum of all elements equals the total WSCH taught in the institution. The MICRO-U representation calls this matrix the Instructional Workload Matrix (IWLM) which is computed by multiplication of the enrollment vector ENRL by the Induced Course Load Matrix (ICLM). Huff's second representation, which is called the Induced Course Load Matrix, Type 1 Coefficients, is the ratio of WSCH for discipline i to the total WSCH for degree program j.** Thus, the elements represent the ratio of the FTE degree program student WSCH load in discipline i. This representation requires that the average FTE student load in WSCH by degree program be stored separately. Input is permitted in either representation, however, and the conversion is made to the WSCH form.

The Induced Workload Matrix (IWLM) is used to calculate a Program Cost Contribution Matrix (PCCM). This matrix represents the proportion of a discipline's resources (WSCH) used to support a degree program. Since resources are usually identified by department or discipline, then the PCCM elements permit direct calculation of the cost attributable to a degree program by that department or discipline. Young used a PCCM where department i contributed directly to degree (or major) j.***

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*Ref. 3, pp. 21-22.

**Ref. 3, pp. 23-24.

***Ref. 4.

Huff calls this matrix an Induced Course Load Matrix, Type 2 Coefficients.* Although there are different representations which could have been used, the forms here appeared to offer further development without problems of nomenclature. The mathematical compution of the PCCM from the IWLM is given in Appendix A2.

A sum of the elements of the IWLM over discipline i gives the total WSCH load for the discipline. The discipline faculty's average class section size and teaching load have been input, permitting computation of the number of sections required. The number of sections is rounded by adding 0.3 and the integer value is used. For example, if the class section size were 20, then the minimum class size would be 14 and the maximum would be 34, then a second section would be added. Although typical rounding factors could be 0.875 (California State Colleges) or even 0.5, 0.3 was initially selected to provide additional variation in class size.

The number of faculty is determined from the number of sections and the average teaching load. Since only full-time faculty members are used, and the faculty is distributed over three ranks, an algorithm was developed that will add members in a preference order decided by the user at data input time.

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*Ref. 3, pp. 26-27.

Basic Computations

Figures 1 through 4 shows the matrices and vectors of the data block after update, but before computation. Figures 5 through 8 show the same matrices and vectors after computation. The computed Induced Work Load Matrix is given in Figure 6. The discipline load is summed and stored in row 9. Row 10 represents the proportion of a department's WSCH taught in discipline i.

The Program Cost Contribution Matrix (PCCM) is computed using the proportion of WSCH compared to the total for that discipline. The equation is:

PCCM(i,j) = IWLM(i,j) / IWLM(i,9)

The resultant PCCM for the example is given in Figure 5.

The WSCH per section (DISCD(i,1)) is computed from WCH/Section (DISCD (i,2)) and average section size (DISCD(i,4)). This value is used to compute the number of sections for each discipline (ICLM(i,9)) which is rounded to yield the number of sections taught (ICLM(i,10)), shown in Figure 5.

The number of faculty for each discipline is determined by rounding the number required from the total workload and the average section size times the average WCH load for faculty members. The distribution of faculty is determined by the three ratios DISCD(j,11), DISCD(j,14), and DISCD(j,17). The floor (lowest integer value contained in the number) of each is added. If this value is less than the total, faculty members are added to the number having the largest fraction until all faculty members can be accounted for. If a particular sequence is desired, this can be obtained by using fractions with sequence numbers in the insignificant decimal positions. For example, if the ration is 0.25, 0.25, and 0.50, then these can be sequenced by using 0.25000001, 0.24999999, and 0.50.
The total salary and number of faculty is computed for each discipline.

The number of faculty is aggregated for the department, and the number of FTE secretaries is computed based on the teaching faculty, FTE department chairman, and the respective ratios.

RRPM Computations

Several of the costs are represented in linear equation form similar to resource requirement prediction models. Three of these are computed by department according to these equations:

Office supplies expense = A x (Department Faculty) + B x (Secretaries) + C

Instructional supplies expense D x (WSCH taught) + E

The total department cost can then be obtained by summing all of the components.

Three costs are computed on a college basis. These are:

Library cost = F x (number of disciplines) + G

Central Administration cost = H x (number of faculty) + I

Physical Plant cost = J x (number of class sections) + K

These constants are included in the vector COLLD and the results are stored in COLLD. These costs are then allocated to disciplines on the basis of their calculation. The results are stored in DISCD. The departmental costs have been allocated to the disciplines in accordance with their proportion of WSCH. Hence total costs for disciplines can be computed, and the totals include costs for departments.

Unit Costing

Costs per degree by discipline can be computed directly from total cost in each discipline and the Program Cost Contribution Matrix. Costs per WSCH by discipline can be computed using the IWLM totals.

All values have then been calculated and the report writer is used to format the reports and provide aggregate totals and average values.

III. Reports.

Samples of the eight reports are shown in Figures 9 through 16. The reports display the results of up to five data blocks representing separate cases. If less than five data blocks are present, then the right-hand columns will show zeros. Any line with all zeros has been supressed which shortens the report and improves readability.

The student name is taken from the last data block, and the date or case number is taken from the BUFF1 vector of the case. Descriptions are taken from the three description vectors of the last data block. Since descriptions are usually cumulative--the college increases in size--this option provides descriptions without adding them to each case.

Report I, Department Data and Resource Requirements, displays data from the DEPTD matrix (Figures 9 and 10). The report program sums the department costs. (Because of rounding, all report totals may not add; addition is performed before rounding.)

Report II, Budget Projections, displays the central costs from COLLD and departmental totals (Figure 11). The cost are summarized by type (central and departmental) and college totals are shown.

Report III, Budget Projections by Discipline, displays the total discipline costs from DISCD which includes all allocated costs (Figure 12). Report IV, Projected Discipline Costs per WSCH, divides the discipline costs by WSCH taught to give the average cost per WSCH by discipline. The average cost shown is not the average of the discipline costs, but represents the total cost divided by total WSCH taught--which yields a weighted average of the discipline costs per WSCH.

Report V, Degree Program Budget Report by Discipline, uses the Program Cost Contribution Matrix, to distribute discipline costs to degree programs (Figure 13). These discipline costs are summed to yield degree costs.

Report VI, Degree Program Annual Costs per WSCH, divides the degree costs by the number of WSCH taught for each degree to give the average WSCH cost (Figure 14). Again, the average cost represents the total costs divided by the total WSCH taught, and would represent a weighted average of the WSCH costs by degree. Report VII, Annual Costs per Student in Degree Programs, divides the degree costs of Report V by the FTE enrollment to give an annual average cost. The Average Cost represents the total cost divided by the total enrollment, again a weighted average of the degree costs.

Report VIII, Degree Program Budget Report by Expenditure Type, displays the components of the Degree Program Costs (Figures 15 and 16). This represents a typical line-item display of the program costs. The PCCM is used to distribute the four classes of costs by degree.

IV. Operating Instructions

Programming Concept

The model was designed to process and report on five cases. Each case is based on the previous case, differing only by updated parameters. This reduces the amount of data entry and permits several cases with only minor differences to be examined quickly, This could be a five-year sequence, or five separate cases.

The data block has provision for both input and computed values. The UPDATE program reads in the base case or uses the previous computed case, updates the data block with any new data, recomputes all values, and then writes the data block out on tape. The number of output data blocks depends on the number of requested cases (default = 5). To continue, the output tape can be input to the UPDATE program as the new base case. The UPDATE program uses the first data block on a tape as the base case in version 70.1. This tape is used by REPORT to provide the output reports.

In order to initiate the use of a system, a card to tape program is used to develop the first data block without computed values (the presence or absence of computed values is irrelevant). The programs themselves are described separately.

In order to make the card input sequence free while using ASA FORTRAN IV as the modeling language, all input card types have the same format, and can be processed in any sequence except for the control card. Each program has a mandatory control card to give the date, program parameters, and in UPDATE, the student's name.

Running the Model

MICRO-U is composed of three programs--Card to Tape, Update, and Reports. The Card to Tape program provides default data for future runs of the Update and Report phases. This program need only be run once to create a master default data tape which can be stored and maintained for future use. This program requires no control card and will accept any of the card types used in the Update program.

After the default data tape has been created, actual runs of MICRO-U can be accomplished. The program will create up to five iterations of calculations, representing five years or five cases, depending on the specifications in the control card. Default is five iterations. Processing is accomplished by first reading the required control card and then inputing default data from the master tape previously created. Data is then read until an end of data card is encountered. At this point, all updating of the default data with new parameters has been accomplished and then the calculations are performed. At the end of the calculations a complete set of calculated data for one iteration is output on to tape for use by the report program. The program then begins at the update phase and continues until the specified number of iterations has been completed. The output tape is in the exact same format as the default data tape. However, the output tape contains up to five blocks of data in sequential mode--one for each iteration.

At the completion of the update program, the reports for MICRO-U are created using the Report program and the data tape created by the Update program. This program also requires a control card giving the report data as well as the number of copies of the reports required. The default is 1 copy and the maximum is 9999 reports.

A flow diagram and sample deck setups are included for all programs (Figures 17-20).

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Keypunching the Data

All data in MICRO-U is read under one standard format as shown in Appendix C. The first three fields (CDID, DPTNO, DISNO) are all numeric integer fields and the data punched must be right justified. Leading zeros are not required. The next field (DESC) is alphanumeric and any valid EBCIDIC or BCD character may be punched. The remaining fields are defined as FORTRAN floating point with the decimal point aligned after the right most possible character of each field respectively. Data may be punched using right justification or may be punched using a decimal point (unless integers are right justified, a decimal point is required in each field). All fields requiring a decimal fraction must use a punched decimal point for alignment.

In general, the update phase of MICRO-U uses the following decision rules for updating parameters:

1. If a field is blank or zero, the appropriate data element is replaced with default data or data from the previous iteration if there was any.

2. If a field has a positive value, the appropriate data element is replaced with that value.

3. If a field is negative, the appropriate data element is set to zero.

The above rules apply except for cards supplying regression coefficients i.e. card types 20, 22, 23. Since negative numbers are valid coefficients in a regression equation the data elements, in these cards are assigned the values present in the fields. For this reason, if any one coefficient value is changed or added on a card, all values for that card must be assigned.

FIGURES

LISTING [illegible] DATA BLOCK FOLLOWS -

```
COLLD
     0.0      8000.0000  11000.0000      0.0      200.0000  55200.0000
     0.0      1000.0000  24000.0000      0.0        0.0        0.0

PCCM
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

ENRL
     0.2455     0.0        0.0        0.0        0.0
     0.2455     0.0        0.0        0.0        0.0
     0.2455     0.0        0.0        0.0        0.0
     0.2635     0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0
   132.0000     0.0        0.0        0.0        0.0

ICLM
    13.3300     0.0        0.0        1.6700     0.0        0.0        0.0        0.0
     1.6700    11.6600     0.0        1.6700     0.0        0.0        0.0        0.0
     1.6700     3.3300     6.6700     3.3300     0.0        0.0        0.0        0.0
     0.0        1.5500     4.1400     9.3100     0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
     0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
```

Figure 1 - MICRO-U Page 1, Before Computation

DPI

0.4800 0.4800 0.4800 0.4800 0.0 0.0 0.0 0.0

IWLM

0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
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BUFF1

1969.0000

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DEGRD

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0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0

Figure 2 - MICRO-U Page 2, Before Computation

0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3.0000	3.0000	3.0000	3.0000	0.0	0.0	0.0	0.0
1.0000	2.0000	3.0000	3.0000	0.0	0.0	0.0	0.0
20.0000	20.0000	20.0000	20.0000	0.0	0.0	0.0	0.0
9.0000	9.0000	9.0000	9.0000	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.3332	0.3332	0.3332	0.3332	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12000.0000	12000.0000	12000.0000	12000.0000	0.0	0.0	0.0	0.0
0.3333	0.3333	0.3333	0.3333	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14000.0000	14000.0000	14000.0000	14000.0000	0.0	0.0	0.0	0.0
0.3335	0.3335	0.3335	0.3335	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16000.0000	16000.0000	16000.0000	16000.0000	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Figure 3 - MICRO-U Page 3, Before Computation

DEPTD

1.0000	2.0000	3.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0000	1.0000	2.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0000	1.0000	1.0000	0.0	0.0	0.0	0.0	0.0
16000.0000	16000.0000	18000.0000	0.0	0.0	0.0	0.0	0.0
0.3300	0.3300	0.3300	0.0	0.0	0.0	0.0	0.0
5000.0000	5000.0000	5000.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1000.0000	1000.0000	1000.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
500.0000	500.0000	500.0000	0.0	0.0	0.0	0.0	0.0
500.0000	500.0000	500.0000	0.0	0.0	0.0	0.0	0.0
1000.0000	1000.0000	1000.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0000	1.0000	3.0000	0.0	0.0	0.0	0.0	0.0
460.0000	460.0000	300.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1.0000	1.0000	1.0000	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DPTDS

HISTORY DEPT	MATHEMATICS DEPT	BIOLOGY DEPT	

DISDS

HISTORY DISCIPLINE	MATHEMATICS DISC	BOTANY DISCIPLINE	ZOOLOGY DISCIPLINE

DEGDS

HISTORY DEGREE	MATHEMATICS DEGREE	BOTANY DEGREE	ZOOLOGY DEGREE

Figure 4 - MICRO-U Page 4, Before Computation

LISTING OF DATA BLOCK FOLLOWS -

COLLEGE DATA

COLLD	Lib $	Multiplier	Constant	Cen Adm $	Multiplier	Constant
	43000.0000	[illegible]	11000.0000	[illegible]	200.0000	55200.0000
	57000.0000	1000.0000	24000.0000	0.0	0.0	0.0
	Phy Plant	Multiplier	Constant			

PROGRAM COST CONTRIBUTION MATRIX

PCCM	11	12	13	14	15	16	17	18 Discipline
21	0.7996	0.0	0.0	0.1002	0.0	0.0	0.0	0.0
22	0.1002	0.7001	0.0	0.1002	0.0	0.0	0.0	0.0
23	0.1002	0.2000	0.6002	0.1998	0.0	0.0	0.0	0.0
24	0.0	0.0999	0.3998	0.5997	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ENROLLMENT (This Year Only)

ENRL					
21	0.2455	0.0	0.0	0.0	0.0
22	0.2455	0.0	0.0	0.0	0.0
23	0.2455	0.0	0.0	0.0	0.0
24	0.2635	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0
	132.0000	0.0	0.0	0.0	0.0

INDUCED COURSE LOAD MATRIX (WCH per FTE)

ICLM	11	12	13	14	15	16	17	18 Discipline
21	13.3300	0.0	0.0	1.6700	0.0	0.0	0.0	0.0
22	1.6700	11.6600	0.0	1.6700	0.0	0.0	0.0	0.0
23	1.6700	3.3300	6.6700	3.3300	0.0	0.0	0.0	0.0
24	0.0	1.5500	4.1400	9.3100	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	9.0035	8.9946	6.0024	8.9995	0.0	0.0	0.0	0.0 Nr. Sections
	9.0000	9.0000	6.0000	9.0000	0.0	0.0	0.0	0.0 Rounded

Figure 5 - MICRO-U Page 1, Computed

DEGREE PRODUCTIVE INDEX

DPI	21	22	23	24	25	26	27	28
	0.4800	0.4800	0.4800	0.4800	0.0	0.0	0.0	0.0

INSTRUCTIONAL WORK LOAD MATRIX (Weekly Student Contact Hours)

IWLM	11	12	13	14	15	16	17	18
21	431.9717	0.0	0.0	54.1180	0.0	0.0	0.0	0.0
22	54.1180	377.8538	0.0	54.1180	0.0	0.0	0.0	0.0
23	54.1180	107.9119	216.1479	107.9119	0.0	0.0	0.0	0.0
24	0.0	53.9120	143.9974	323.8201	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	540.2075	539.6775	360.1453	539.9678	0.0	0.0	0.0	0.0
	1.0000	1.0000	0.4001	0.5999	0.0	0.0	0.0	0.0

Total % of Dept Load

BUFFER (For Expansion)

BUFF1	Date	Student Name					
	1970.0000	COLBY SPRINGER					
	1900.0000	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	0.0	0.0					

DEGREE DATA

DEGRD	21	22	23	24	25	26	27	28	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Blank
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Blank
	106653.62	106735.06	106189.94	111920.87	0.0	0.0	0.0	0.0	Total Cost
	68757.19	68809.69	66133.06	69800.06	0.0	0.0	0.0	0.0	Department Costs
	14234.22	14245.08	14237.90	15282.79	0.0	0.0	0.0	0.0	Central Admin
	13988.80	13999.48	13992.41	15019.29	0.0	0.0	0.0	0.0	Physical Plant
	9673.54	9680.93	11826.64	11818.87	0.0	0.0	0.0	0.0	Library
	32.41	32.41	32.41	34.78	0.0	0.0	0.0	0.0	Enrollment (FTE)
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Figure 6 - MICRO-U Page 2, Computed

DISCIPLINE DATA

DISC	11	12	13	14	15	16	17	18	
	60.0000	60.0000	60.0000	60.0000	0.0	0.0	0.0	0.0	WSCH/Section
	3.0000	3.0000	3.0000	3.0000	0.0	0.0	0.0	0.0	WCH/Section
	1.0000	2.0000	3.0000	3.0000	0.0	0.0	0.0	0.0	Dept Nr
	20.0000	20.0000	20.0000	20.0000	0.0	0.0	0.0	0.0	Avg Sec Size
	9.0000	9.0000	9.0000	9.0000	0.0	0.0	0.0	0.0	Avg WCH Load
77000.	1875	76999.6250	47813.4023	71686.8750	0.0	0.0	0.0	0.0	Dept Cost
10750.	0000	10750.0000	10750.0000	10750.0000	0.0	0.0	0.0	0.0	Library Cost
15545.	4531	15545.4531	10363.6328	15545.4531	0.0	0.0	0.0	0.0	Phy Plant
15818.	1797	15818.1797	10545.4531	15818.1797	0.0	0.0	0.0	0.0	Cen Admin
119113.	7500	119113.1875	79472.4375	113800.4375	0.0	0.0	0.0	0.0	Total Cost
	0.3332	0.3332	0.3332	0.3332	0.0	0.0	0.0	0.0	% Rank 1
	1.0000	1.0000	0.0	1.0000	0.0	0.0	0.0	0.0	Number
12000.	0000	12000.0000	12000.0000	12000.0000	0.0	0.0	0.0	0.0	Salary
	0.3333	0.3333	0.3333	0.3333	0.0	0.0	0.0	0.0	% Rank 2
	1.0000	1.0000	1.0000	1.0000	0.0	0.0	0.0	0.0	Number
14000.	0000	14000.0000	14000.0000	14000.0000	0.0	0.0	0.0	0.0	Salary
	0.3335	0.3335	0.3335	0.3335	0.0	0.0	0.0	0.0	% Rank 3
	1.0000	1.0000	1.0000	1.0000	0.0	0.0	0.0	0.0	Number
16000.	0000	16000.0000	16000.0000	16000.0000	0.0	0.0	0.0	0.0	Salary
	220.4963	220.7118	220.6677	210.7541	0.0	0.0	0.0	0.0	Cost/WSCH
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Note: Allocations of library, physical plant, and central administration costs by discipline given. Faculty members (except department chairmen and staff) given by rank with Rank 3 highest.

Figure 7 - MICRO-U Page 3, Computed

DEPARTMENTAL DATA

DEPID	01	02	03	04	05	06	07	08	
	1.0000	2.0000	3.0000	0.0	0.0	0.0	0.0	0.0	Number
	.0	.0	0.0	0.0	0.0	0.0	0.0	0.0	Blank
	.0	.0	.0	.0	.0	0.0	0.0	0.0	# Discip
	1.0000	1.0000	1.0000	.0	.0	0.0	0.0	0.0	FTE Admin
	0.0	.0	.0	.0	.0	0.0	0.0	0.0	Admin Salar
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	FTE Dept Ch
	1.0000	1.0000	1.0000	.0	.0	0.0	0.0	0.0	Salary
10	0.0000	10000.0000	18000.0000	.0	.0	0.0	0.0	0.0	Sec/Faculty
	0.3300	0.3300	0.3300	0.0	.0	0.0	0.0	0.0	Salary
50	00.0000	5000.0000	5000.0000	.0	0.0	0.0	0.0	0.0	FTE Sec
	2.0000	2.0000	3.0000	0.0	0.0	0.0	0.0	0.0	Travel Exp
10	00.0000	1000.0000	1000.0000	0.0	0.0	0.0	0.0	0.0	Office Sup
40	00.0000	4000.0000	5500.0000	0.0	0.0	0.0	0.0	0.0	per facult
	500.0000	500.0000	500.0000	0.0	0.0	0.0	0.0	0.0	per sec
	500.0000	500.0000	500.0000	0.0	0.0	0.0	0.0	0.0	base
1000.0000		1000.0000	1000.0000	0.0	0.0	0.0	0.0	0.0	Instr Suppl
10	00.2075	999.6775	3000.3391	0.0	0.0	0.0	0.0	0.0	per WSCH
	1.0000	1.0000	3.0000	0.0	0.0	0.0	0.0	0.0	base
	460.0000	460.0000	300.0000	0.0	0.0	0.0	0.0	0.0	$Dept Fac
58000.0000		58000.0000	90000.0000	0.0	0.0	0.0	0.0	0.0	$ Total
77	00.1875	76999.6250	119500.3125	0.0	0.0	0.0	0.0	0.0	FTE Teachi
	3.0000	3.0000	5.0000	0.0	0.0	0.0	0.0	0.0	Sec/Dept Cl
03	1.0000	1.0000	1.0000	0.0	0.0	0.0	0.0	0.0	
03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Note: Administrative assistant permitted. Travel expense per faculty member.

DATA COMPONENT DESCRIPTIONS

DEPTDS
HISTORY DEPT MATHEMATICS DEPT BIOLOGY DEPT

DISCDS
HISTORY DISCIPLINE MATHEMATICS DISC BOTANY DISCIPLINE ZOOLOGY DISCIPLINE

DEGDS
HISTORY DEGREE MATHEMATICS DEGREE BOTANY DEGREE ZOOLOGY DEGREE

Figure 8 - MICRO-U, Page 4 Computed

AME - COLO. SPRINGER
3/23/70

CRU-U OUTPUT REPORT I
DEPARTMENT DATA AND RESOURCE REQUIREMENTS

	1970	1971	1972	1973	1974
HISTORY DEPT 1					
NUMBER OF CLASS SECTIONS	9.	10.	10.	11.	11.
NUMBER OF FACULTY	4.00	4.00	4.00	5.00	5.00
NUMBER OF SUPPORT STAFF	2.00	2.00	2.00	2.00	2.00
FACULTY SALARIES	58000.	58000.	58000.	74000.	74000.
SUPPORT STAFF WAGES	10000.	10000.	10000.	10000.	10000.
EXPENSES - TRAVEL	4000.	4000.	4000.	5000.	5000.
OFFICE SUPPLIES	4000.	4000.	4000.	4500.	4500.
INSTRUCTION SUPPLIES	1000.	1053.	1074.	1115.	1156.
TOTAL DEPARTMENT COST	77000.	77053.	77074.	94615.	94656.
MATHEMATICS DEPT 2					
NUMBER OF CLASS SECTIONS	9.	10.	10.	11.	11.
NUMBER OF FACULTY	4.00	4.00	4.00	5.00	5.00
NUMBER OF SUPPORT STAFF	2.00	2.00	2.00	2.00	2.00
FACULTY SALARIES	58000.	58000.	58000.	74000.	74000.
SUPPORT STAFF WAGES	10000.	10000.	10000.	10000.	10000.
EXPENSES - TRAVEL	4000.	4000.	4000.	5000.	5000.
OFFICE SUPPLIES	4000.	4000.	4000.	4500.	4500.
INSTRUCTION SUPPLIES	1000.	1053.	1073.	1114.	1155.
TOTAL DEPARTMENT COST	77000.	77053.	77073.	94614.	94655.
BIOLOGY DEPT 3					
NUMBER OF CLASS SECTIONS	15.	16.	17.	18.	19.
NUMBER OF FACULTY	6.00	6.00	6.00	7.00	8.00
NUMBER OF SUPPORT STAFF	3.00	3.00	3.00	3.00	3.00
FACULTY SALARIES	90000.	90000.	90000.	106000.	118000.
SUPPORT STAFF WAGES	15000.	15000.	15000.	15000.	15000.
EXPENSES - TRAVEL	6000.	6000.	6000.	7000.	8000.
OFFICE SUPPLIES	5500.	5500.	5500.	6000.	6500.
INSTRUCTION SUPPLIES	3000.	3266.	3369.	3573.	3778.
TOTAL DEPARTMENT COST	119500.	119766.	119869.	137573.	151278.

Figure 9 - Report I, Page 1

NAME - COLBY SPRINGER
03/23/70

MICRO-U OUTPUT REPORT I
DEPARTMENT DATA AND RESOURCE REQUIREMENTS

	1970	1971	1972	1973	1974
TOTAL DEPARTMENTAL COSTS	273500.	273872.	274016.	326802.	340588.

Figure 10 - Report I, Page 2

NAME - CLOY SPRINGER
03/23/70

MARC-U OUTPUT REPORT II
BUDGET PROJECTIONS

	1970	1971	1972	1973	1974
CENTRAL ADMINISTRATION	58000.	58000.	58000.	58600.	58800.
LIBRARY	43000.	43000.	43000.	43000.	43000.
PHYSICAL PLANT	57000.	60000.	61000.	64000.	65000.
TOTAL CENTRAL COSTS	158000.	161000.	162000.	165600.	166800.
HISTORY DEPT	77000.	77053.	77074.	94615.	94656.
MATHEMATICS DEPT	77000.	77053.	77073.	94614.	94655.
BIOLOGY DEPT	119500.	119766.	119869.	137573.	151278.
TOTAL DEPARTMENTAL	273500.	273872.	274016.	326802.	340588.
TOTAL	431500.	434872.	436016.	492402.	507388.

Figure 11 - Report II

NAME - COLBY SPRINGER
03/23/70

MICRO-U OUTPUT REPORT III
BUDGET PROJECTIONS BY DISCIPLINE

	1970	1971	1972	1973	1974
HISTORY DISCIPLINE	119114.	120288.	120128.	139708.	138525.
MATHEMATICS DISC	119113.	120288.	120128.	139707.	138524.
BOTANY DISCIPLINE	79472.	79215.	80797.	85366.	95721.
ZOOLOGY DISCIPLINE	113800.	115081.	114962.	127621.	134619.
TOTAL	431500.	434872.	436015.	492402.	507388.

NAME - COLBY SPRINGER
03/23/70

MICRO-U OUTPUT REPORT IV
PROJECTED DISCIPLINE COSTS PER WSCH

	1970	1971	1972	1973	1974
HISTORY DISCIPLINE	220.	203.	196.	213.	199.
MATHEMATICS DISC	221.	203.	196.	214.	199.
BOTANY DISCIPLINE	221.	200.	197.	196.	206.
ZOOLOGY DISCIPLINE	211.	194.	187.	195.	194.
AVERAGE COST	218.	200.	194.	205.	199.

Figure 12 -- Reports III and IV

AME - CO[illegible] SPRINGER

3/23/70

MICRO-U OUTPUT REPORT V
DEGREE PROGRAM BUDGET REPORT
BY DISCIPLINE

	1970	1971	1972	1973	1974
ISTORY DEGREE					
HISTORY DISCIPLINE	95248.	96187.	96059.	111716.	110770.
ZOOLOGY DISCIPLINE	11406.	11534.	11522.	12791.	13492.
TOTAL	106654.	107721.	107581.	124506.	124262.
ATHEMATICS DEGREE					
HISTORY DISCIPLINE	11933.	12050.	12034.	13996.	13877.
MATHEMATICS DISC	83397.	84219.	84107.	97815.	96987.
ZOOLOGY DISCIPLINE	11406.	11534.	11522.	12791.	13492.
TOTAL	106735.	107803.	107664.	124602.	124356.
OTANY DEGREE					
HISTORY DISCIPLINE	11933.	12050.	12034.	13996.	13877.
MATHEMATICS DISC	23817.	24052.	24020.	27935.	27699.
BOTANY DISCIPLINE	47697.	47542.	48492.	51234.	57449.
ZOOLOGY DISCIPLINE	22743.	22999.	22975.	25505.	26903.
TOTAL	106190.	106644.	107521.	118670.	125928.
OOLOGY DEGREE					
MATHEMATICS DISC	11899.	12016.	12000.	13956.	13838.
BOTANY DISCIPLINE	31776.	31673.	32305.	34132.	38272.
ZOOLOGY DISCIPLINE	68246.	69014.	68943.	76535.	80731.
TOTAL	111921.	112703.	113249.	124623.	132841.

Figure 13 - Report V

NAME = COLBY SPRINGER
03/23/70

MICRO-U OUTPUT REPORT VI
DEGREE PROGRAM ANNUAL COSTS PER WSCH

	1970	1971	1972	1973	1974
HISTORY DEGREE	219.	202.	195.	211.	198.
MATHEMATICS DEGREE	220.	202.	195.	211.	199.
BOTANY DEGREE	218.	200.	195.	201.	201.
ZOOLOGY DEGREE	215.	197.	191.	197.	198.
AVERAGE COST	218.	200.	194.	205.	199.

NAME - COLBY SPRINGER
03/23/70

MICRO-U OUTPUT REPORT VII
ANNUAL COSTS PER STUDENT IN DEGREE PROGRAMS

	1970	1971	1972	1973	1974
HISTORY DEGREE	3291.	3026.	2921.	3170.	2977.
MATHEMATICS DEGREE	3294.	3028.	2924.	3172.	2980.
BOTANY DEGREE	3277.	2996.	2920.	3021.	3017.
ZOOLOGY DEGREE	3218.	2950.	2865.	2956.	2966.
AVERAGE COST	3269.	2999.	2907.	3078.	2985.

Figure 14 - Reports VI and VII

NAME - COLLEY SPRINGER

8/23/70

CRC-U OUTPUT REPORT VIII
DEGREE PROGRAM BUDGET REPORT
BY EXPENDITURE TYPE

	1970	1971	1972	1973	1974
HISTORY DEGREE					
DEPARTMENTAL COSTS	68757.	68816.	68838.	83929.	84786.
LIBRARY	9674.	9674.	9674.	9674.	9674.
CENTRAL ADMINISTRATION	14234.	14234.	14234.	15066.	14110.
PHYSICAL PLANT	13989.	14998.	14836.	15838.	15693.
	106654.	107721.	107581.	124506.	124262.
MATHEMATICS DEGREE					
DEPARTMENTAL COSTS	68810.	68868.	68891.	83994.	84850.
LIBRARY	9681.	9681.	9681.	9681.	9681.
CENTRAL ADMINISTRATION	14245.	14245.	14245.	15078.	14121.
PHYSICAL PLANT	13999.	15009.	14847.	15850.	15705.
	106735.	107803.	107664.	124602.	124356.
BOTANY DEGREE					
DEPARTMENTAL COSTS	66133.	66245.	66288.	77926.	82873.
LIBRARY	11827.	11827.	11827.	11827.	11827.
CENTRAL ADMINISTRATION	14238.	14238.	14238.	13395.	14898.
PHYSICAL PLANT	13992.	14335.	15169.	15522.	16331.
	106190.	106644.	107521.	118670.	125928.
ZOOLOGY DEGREE					
DEPARTMENTAL COSTS	69800.	69944.	69999.	80953.	88079.
LIBRARY	11819.	11819.	11819.	11819.	11819.
CENTRAL ADMINISTRATION	15283.	15283.	15283.	15060.	15672.
PHYSICAL PLANT	15019.	15658.	16148.	16791.	17271.
	111921.	112703.	113249.	124623.	132841.

Figure 15 - Reports VIII, Page 1

NAME - COLBY SPRINGER

03/23/70

MICRO-U OUTPUT REPORT VIII
DEGREE PROGRAM BUDGET REPORT
BY EXPENDITURE TYPE

	1970	1971	1972	1973	1974
TOTAL ALL DEPARTMENTS	431499.	434872.	436015.	492401.	507388.

Figure 16 - Report VIII, Page 2

MICRO-U

SYSTEMS FLOW

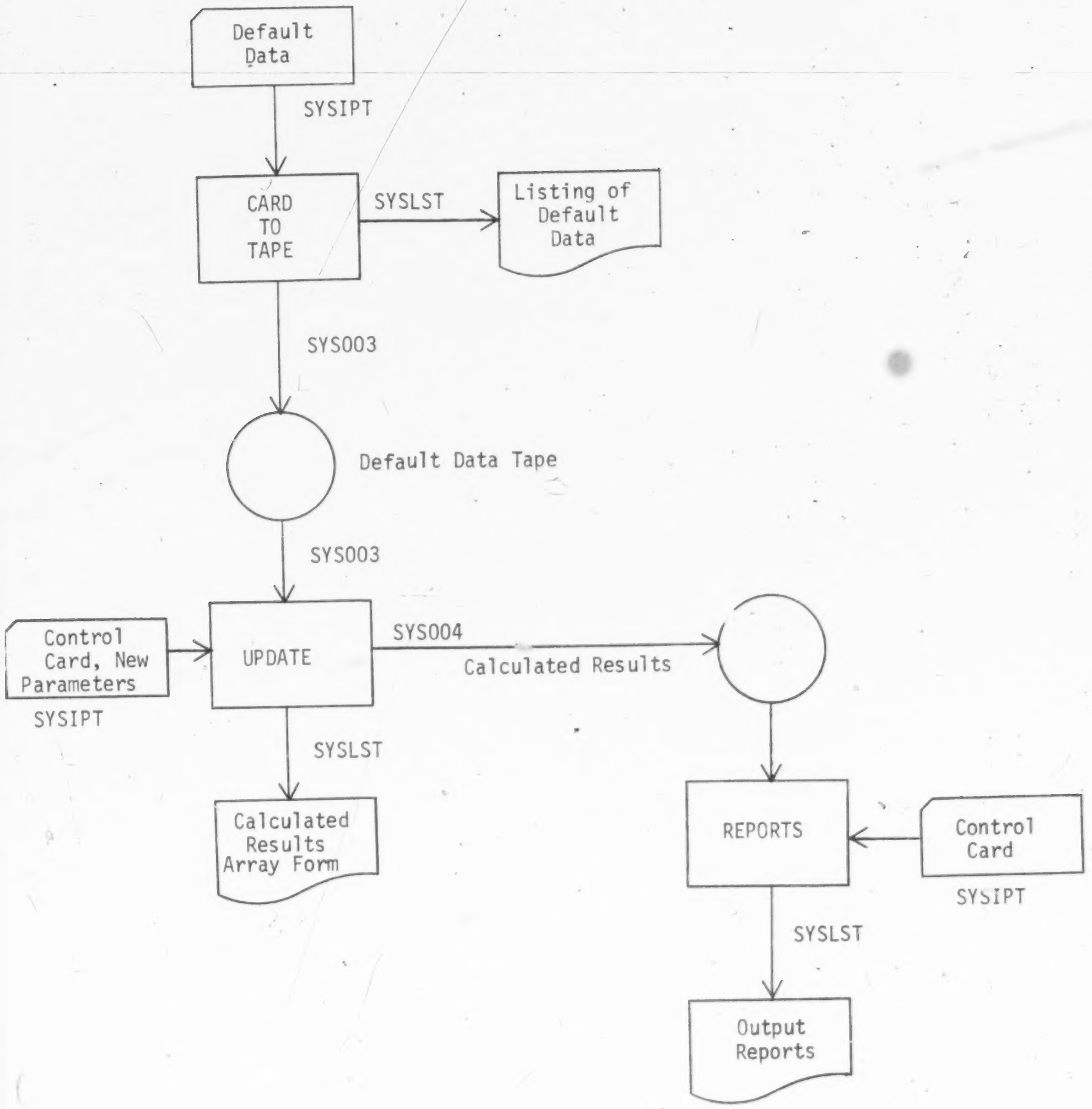

Figure 17

42

CARD TO TAPE
DECK SETUP

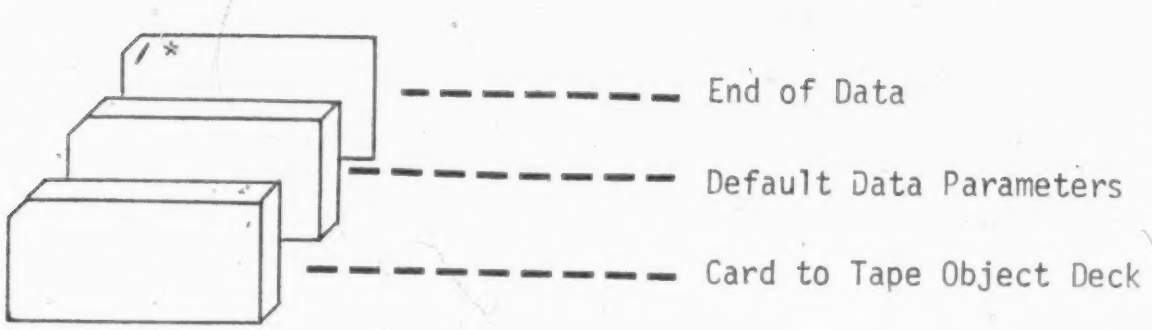

Figure 18

UPDATE
DECK SETUP

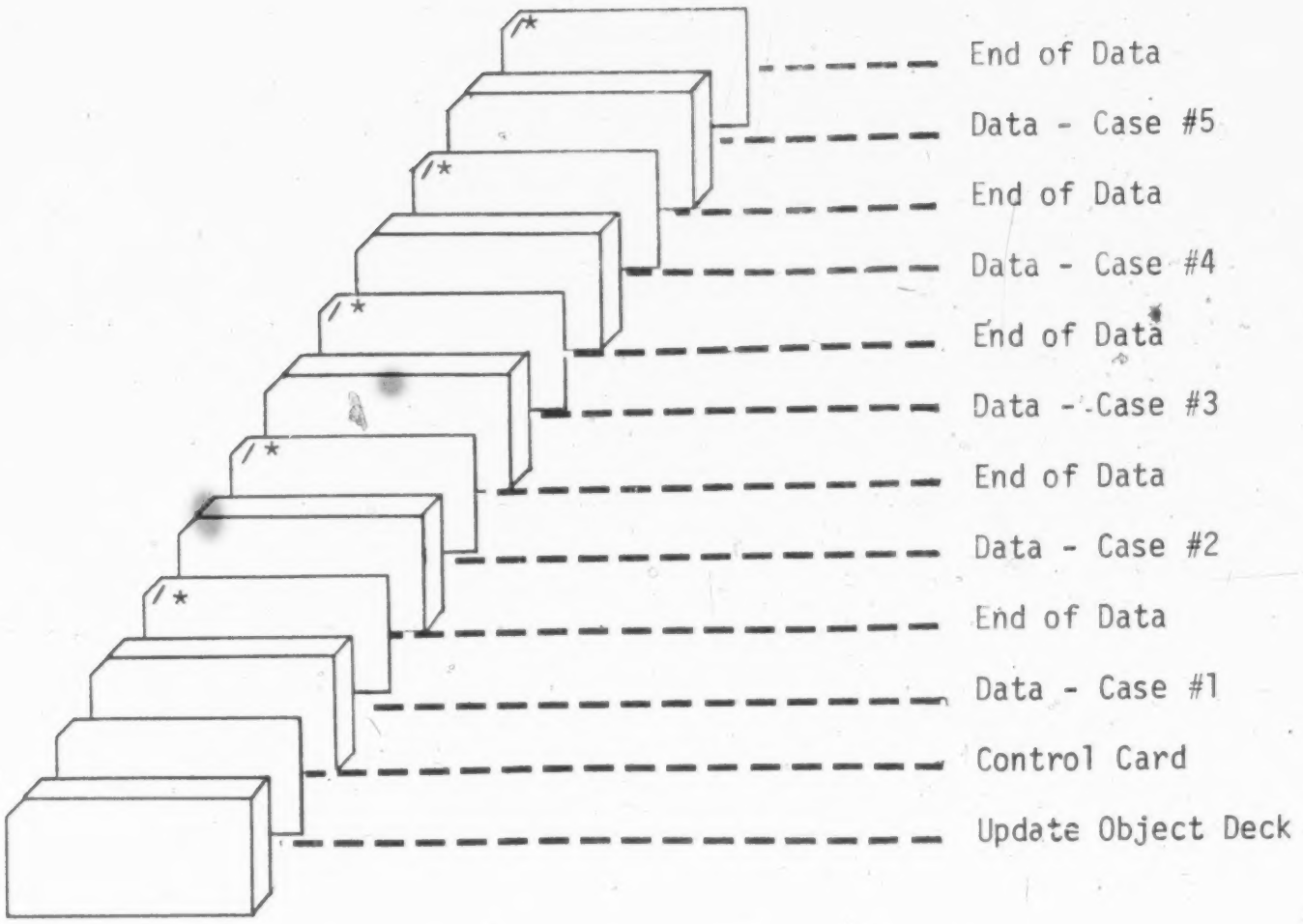

Figure 19

REPORTS
DECK SETUP

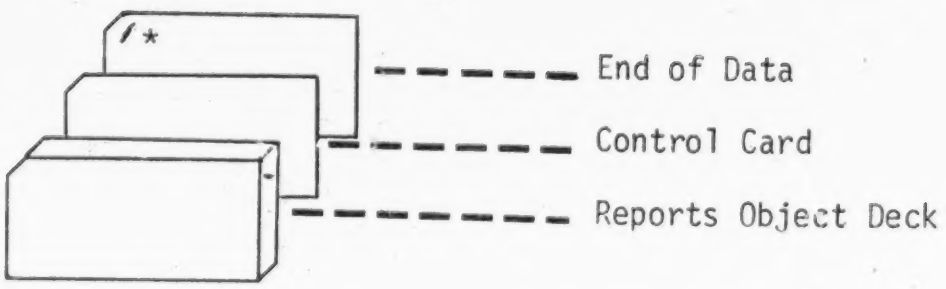

Figure 20

APPENDICES

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APPENDIX A1

INPUT VARIABLE LIST

Variable	Type	Dimension	Description
BUFF1	Vector	71	Year or case number, student name, base year, reserved for later use.
COLLD	Vector	12	Regression coefficients and computed values for college data.
DEGDS	Alpha Vector	8, (5)	Alphanumeric descriptions of the eight degree programs using a five-word description.
DEGRD	Matrix	8, 12	Degree data, eight degrees, twelve elements.
DEPTD	Matrix	8, 24	Department data, eight departments 24 elements (some values computed).
DISCD	Matrix	8, 24	Discipline data, eight disciplines, 24 elements (some values computed).
DISDS	Alpha Vector	8, (5)	Alphanumeric descriptions of the eight disciplines using a five-word (20 character) description.
DPI	Vector	8	Degree Productive Index for degree i.
DPTDS	Alpha Vector	8, (5)	Alpanumeric descriptions of the eight departments using a five-word (20 character) description.
ENRL	Matrix	5, 9	Enrollment distribution by degree program (j = 1, 8) and total FTE (j = 9). Only the first vector (i = 1) is used; the remaining is left for a student flow model.
ICLM	Matrix	8, 10	Induced Course Load Matrix by degree and discipline plus computed class sections required and rounded sections for each discipline.

IWLM	Matrix	8, 10	Instructional Work Load Matrix by WCH per discipline per degree.
PCCM	Matrix	8, 8	Program Cost Contribution Matrixx

Appendix A2

COMPUTED VARIABLE LIST

$$IWLM_{i,j} = ENRL_{1,j} \times ENRL_{1,9} \times ICLM_{i,j}$$

$i = i^{th}$ Discipline

$j = j^{th}$ Degree

$$IWLM_{i,9} = \sum_{j=1}^{8} IWLM_{i,j}$$

$i = i^{th}$ Discipline

$j = j^{th}$ Degree

$$IWLM_{i,10} = (IWLM_{i,9}) \times \left(\sum_{j=1}^{8} IWLM_{j,9} \times z\right)^{\frac{1}{\ }}$$

i,j Disciplines

$z = 0 \quad i \neq j$

$z = 1 \quad i = j$

$$DISCD_{i,1} = DISCD_{i,2} \times DISCD_{i,4}$$

$i = i^{th}$ Discipline

$$PCCM_{i,j} = \frac{IWLM_{i,j}}{IWLM_{i,9}}$$

$i = i^{th}$ Discipline

$j = j^{th}$ Degree

$$ICLM_{i,9} = \frac{IWLM_{i,9}}{DISCD_{i,1}}$$

$i = j^{th}$ Discipline

$$ICLM_{i,10} = ICLM_{i,9} + 0.3$$

$i = i^{th}$ Discipline

PHASE I

$$T_1 = \left\lfloor \frac{IWLM_{i,9}}{DISCD_{i,5} \times DISCD_{i,4}} + 0.5 \right\rfloor$$

$F_1 = DISCD_{i,11} \times T_1$

$F_2 = DISCD_{i,14} \times T_1$

$F_3 = DISCD_{i,17} \times T_1$

IF $F_1 > 1.0$, $DISCD_{i,12} = \lfloor F_1 \rfloor$

IF $F_2 > 1.0$, $DISCD_{i,15} = \lfloor F_2 \rfloor$

IF $F_3 > 1.0$, $DISCD_{i,18} = \lfloor F_3 \rfloor$

$T_2 = DISCD_{i,12} + DISCD_{i,15} + DISCD_{i,18}$

PHASE II

TEST: $T_2 : T_1$ = →

IF $F_1 \geq F_2 \wedge F_3$, $DISCD_{i,12} = DISCD_{i,12} + 1$

$T_2 = T_2 + 1$

$F_1 = 0$

IF $F_2 \geq F_3$, $DISCD_{i,15} = DISCD_{i,15} + 1$

$T_2 = T_2 + 1$

$F_2 = 0$

$DISCD_{i,18} = DISCD_{i,18} + i$

$T_2 = T_2 + 1$

$F_3 = 0$

T_1 = TOTAL FACULTY REQUIRED

T_2 = TOTAL FACULTY ALLOCATED TO RANK

F_1 = Faculty level 1

F_2 = Faculty level 2

F_3 = Faculty level 3

Note: Integer portion indicates number at respective level to be added and full number indicates order of preference in adding addition members in Phase II

$i = i^{\underline{th}}$ Discipline

$$DEPTD_{i,21} = \sum_{j=1}^{8} (DISCD_{j,12} + DISCD_{j,15} + DISCD_{j,18}) \times z$$

$i = i^{\underline{th}}$ Department

$j = j^{\underline{th}}$ Discipline

$z = 0$ $DISCD_{j,3} \neq i$

$z = 1$ $DISCD_{j,3} = i$

$$DEPTD_{i,10} = (DEPTD_{i,21} \times DEPTD_{i,8}) + (DEPTD_{i,6} \times DEPTD_{i,22}) + 0.5$$

$i = i^{\underline{th}}$ Department

$$DEPTD_{i,12} = (DEPTD_{i,6} + DEPTD_{i,21}) \times DEPTD_{i,13}) + (DEPTD_{i,10} \times DEPTD_{i,14}) + DEPTD_{i,15}$$

$i = i^{\underline{th}}$ Department

$$DEPTD_{i,16} = (DEPTD_{i,17} \times \sum_{j=1}^{8} (IWLM_{\cdot,9} \times z) + DEPTD_{i,18}$$

$z = 0$ $DISCD_{j,3} \neq i$

$z = 1$ $DISCD_{j,3} = i$

$i = i^{\underline{th}}$ Department

$j = j^{\underline{th}}$ Discipline

$$DEPTD_{i,19} = DEPTD_{i,6} \times DEPTD_{i,7} + \sum_{k=1}^{8} \sum_{j = 12,15,18} (DISCD_{k,j} \times DISCD_{k,j+1} \times z)$$

$i = i^{\underline{th}}$ Department

$k = k^{\underline{th}}$ Discipline

$z = 0 \quad DISCD_{k,3} \neq i$

$z = 1 \quad DISCD_{k,3} = i$

$$DEPTD_{i,20} = DEPTD_{i,4} \times DEPTD_{i,5} + DEPTD_{i,9} \times DEPTD_{i,10} + DEPTD_{i,11} \times (DEPTD_{i,6} + DEPTD_{i,21}) + DEPTD_{i,12} + DEPTD_{i,16} + DEPTD_{i,19}$$

$i = i^{\underline{th}}$ Department

$$COLLD_1 = COLLD_2 \times \sum_{i=1}^{8} DEPTD_{i,3} + COLLD_3$$

$i = i^{\underline{th}}$ Department

$$COLLD_4 = COLLD_5 \times \sum_{i=1}^{8} (DEPTD_{i,6} + DEPTD_{i,21}) + COLLD_6$$

$i = i^{\underline{th}}$ Department

$$COLLD_7 = COLLD_8 \times \sum_{i=1}^{8} ICLM_{i,10} + COLLD_9$$

$$DISCD_{i,6} = DEPTD_{j,20} \times IWLM_{i,10}$$

$i = i^{\underline{th}}$ Discipline

$j = DISCD_{i,3}$

$$DISCD_{i,7} = \sum_{j=1}^{\frac{COLLD_1}{8}} DEPTD_{j,3}$$

$i = i^{\underline{th}}$ Discipline

$$DISCD_{i,8} = \frac{COLLD_7 \times ICLM_{i,10}}{\sum_{j=1}^{8} ICLM_{j,10}}$$

$i = i^{\underline{th}}$ Discipline

$$DISCD_{i,9} = \frac{COLLD_4 \times \sum_{j=12,15,18} DISCD_{i,j}}{\sum_{k=1}^{8} \sum_{j=12,15,18} DISCD_{k,j}}$$

$i = i^{\underline{th}}$ Discipline

$$DISCD_{i,10} = DISCD_{i,6} + DISCD_{i,7} + DISCD_{i,8} + DISCD_{i,9}$$

$i = i^{\underline{th}}$ Discipline

$$DISCD_{i,20} = \frac{DISCD_{i,10}}{IWLM_{i,9}}$$

$i = i^{\underline{th}}$ Discipline

$$DEGRD_{j,4} = \sum_{i=1}^{8} (PCCM_{i,j} \times DISCD_{i,6})$$

$j = j^{\underline{th}}$ Degree

$$DEGRD_{j,5} = \sum_{i=1}^{8} (PCCM_{i,j} \times DISCD_{i,9})$$

$j = j^{\underline{th}}$ Degree

$$DEGRD_{j,6} = \sum_{i=1}^{8} (PCCM_{i,j} \times DISCD_{i,8})$$

$j = j^{\underline{th}}$ Degree

$$DEGRD_{j,7} = \sum_{i=1}^{8} (PCCM_{i,j} \times DISCD_{i,7})$$

$j = j^{\underline{th}}$ Degree

$$DEGRD_{j,3} = DEGRD_{j,4} + DEGRD_{j,5} + DEGRD_{j,6} + DEGRD_{j,7}$$

$j = j^{\underline{th}}$ Degree

$$DEGRD_{j,8} = ENRL_{1,j} \times ENRL_{1,9}$$

$j = j^{\underline{th}}$ Degree

Appendix B1

COMMON DATA BLOCK

Variable	Dimension	Number of Words	Word Number	
COLLD	12	12	1	12
PCCM	8, 8	64	13	76
ENRL	5, 9	45	77	121
ICLM	8,10	80	122	201
CPI	8	8	202	209
IALM	8,10	80	210	289
BUFF1	71	71	290	360
DEGRD	8,12	96	361	456
DISCD	8,24	192	457	648
DEPTD	8,24	192	649	840
DPTDS	8, 5	40	841	880
DISDS	8, 5	40	881	920
DEGDS	8, 5	40	921	960

Appendix B2

ELEMENT DESCRIPTIONS

Variable	Element Number	Description
BUFF1	1	Year or case number for data block
	2 - 6	Student Name (alphanumeric)
	7 - 71	Unused
COLLD	1	Library, computed cost
	2	Library, cost per discipline
	3	Library, fixed cost
	4	Central Administration, computed cost
	5	Central Administration, cost per faculty member
	6	Central Administration, fixed cost
	7	Physical Plant, computed cost
	8	Physical Plant, cost per section
	9	Physical Plant, fixed cost
	10 - 12	Unused
DEGDS	i = 1, 8	Alpha description for degree i
DEGRD	i = 1, 8	Degree i
	j = 1, 2	Unused
	3	Total $ Cost, all enrolled FTE including allocated costs
	4	Departmental $ Cost
	5	Central Administration Cost
	6	Physical Plan Cost
	7	Library Cost
	8	Enrollment, FTE
	9, 12	Unused
DEPTD	i = 1; 8	Department i
	j = 1	Department number (only 1 to 8 valid)
	2	Unused
	3	Number of disciplines, department i
	4	FTE Department Administrators
	5	Department Administrators Average Salary
	6	FTE Department Chairman
	7	Salary, Department Chairman
	8	Secretaries/Faculty Member
	9	Average Secretarial Salary
	10	FTE Secretaries
	11	Travel Expense per Faculty Member
	12	Office Supply Cost, computed

Variable	Element Number	Description
DEPTD	j = 13	Office Supplies, cost per faculty member
	14	Office Supplies, cost per secretary
	15	Office Supplies, fixed cost
	16	Instructional Supplies, computed
	17	Instructional Supplies, cost per WSCH
	18	Instructional Supplies, fixed cost
	19	Total Cost for Department Faculty (Chairman plus teaching faculty)
	20	Total Departmental Cost
	21	FTE Teaching Faculty
	22	Secretaries/Department Chairman
	23-24	Unused
DISCD	i = 1, 8	Discipline i
	j = = 1	Average WSCH/Class Section, computed
	2	Average WCH/Section
	3	Department Number
	4	Average Section Size (in FTE)
	5	Average WCH Faculty Load
	6	Allocated Department Cost
	7	Allocated Library Cost
	8	Allocated Physical Plant Cost
	9	Allocated Center Administrative Cost
	10	Total Cost
	11	Faculty Rank Ratio, Rank 1
	12	Number of Faculty, Rank 1, computed
	13	Average Faculty Salary, Rank 1
	14	Faculty Rank Ratio, Rank 2
	15	Number of Faculty, Rank 2, computed
	16	Average Faculty Salary, Rank 2
	17	Faculty Rank Ratio, Rank 3
	18	Number of Faculty, Rank, computed
	19	Average Faculty Salary, Rank 3
	20	Cost / WSCH Taught
	21-24	Unused
DISDS	i = 1, 8	Alpha description for discipline i
DPI	i = 1, 8	Degree Productive Index, degree program i

Variable	Element Number	Description
DPTDS	i = 1, 8	Alpha description for department i
ENRL	i = 1, 5	1 - current year, 2-5 unused
	j = 1, 8	Enrollment, percent in degree program i
	9	Enrollment, Total Students (FTE)
ICLM	i = 1, 8	Induced Course Load Matrix for discipline i
	j = 1, 8	Average WCH per FTE indisciplined for degree program j
	9	Number of sections needed, computed
	10	Number of sections, rounded
IWLM	i = 1, 8	Instructional Work Load Matrix
	j = 1, 8	WSCH for discipline i, degree program j
	9	Total WSCH for discipline i
	10	Discipline WSCH/Department WSCH ratio, computed
PCCM	i = 1, 8	Program Cost Contribution Matrix,
	j = 1, 8	Proportion of discipline i used for degree j, based on WSCH of IWLM

Appendix C1

BASIC CARD FORMAT

Columns	Variable Name	Use
1 - 2	CDID	Card Identification
3 - 4	DPTNO	Department Number
5 - 6	DISNO	Discipline Number
7 - 26	DESC	Alphabetic Description
27 - 28	CHAR2	2 Digit Field
29 - 33	FIVE1	5 Digit Field, Number 1, Floating Point Representation (Decimal points may be used in punching)
34 - 38	FIVE2	
39 - 43	FIVE3	
44 - 48	FIVE4	
49 - 56	EGHT1	8 Digit Field, Number 1
57 - 64	EGHT2	
65 - 72	EGHT3	
73 - 80	EGHT4	

Appendix C2

INPUT CARD TYPES

Type	Description
02	Enrollment, Card 1, Percentage Distribution by Degree Program (first four of eight) plus Total Enrollment (either card)
03	Enrollment, Card 2, Percentage Distribution by Degree Program (second four of eight) plus Total Enrollment (either card)
06	Departmental Data, Card 1, Staffing and Travel Expense (see also Card 20)
08	Discipline Data, Card 1, Staffing and Teaching Load
09	Discipline Data, Card 2, Faculty Salaries
11	Degree Data, Induced Course Load Vector (Ratio Form)
12	Degree Data, WCH Per Degree (to compute Induced Course Load Vector in absolute form from card 11)
14	Degree Data, Induced Course Load Vector (Absolute Form) (no Card 12 required if Card 14 used)
16	Degree Productivity Index
20	Departmental Data, Card 2, Supply Expense Regression Coefficients
22	College Data, Card 1, Library and Central Administrative Expense Regression Coefficients
23	College Data, Card 2, Physical Plant Regression Coefficients

Appendix C3

CARD FORMATS

Columns	Use
Card Type '02' Enrollment, Card 1	
1 - 2	'02'
3 - 4	Year YY or case number
29 - 33	Degree 21, percent total FTE
34 - 38	Degree 22
39 - 43	Degree 23
44 - 48	Degree 24
49 - 56	Total Enrollment, FTE (may be punched in either '02' or '03' or both
Card Type '03' Enrollment, Card 2	
1 - 2	'03'
3 - 4	Year YY or case number
29 - 33	Degree 25, percent total FTE
34 - 38	Degree 26
39 - 43	Degree 27
44 - 48	Degree 28
49 - 56	Total Enrollment, FTE
Card Type '06' Departmental Data, Card 1	
1 - 2	'06'
3 - 4	Department Number (01 through 08)
5 - 6	Number of Disciplines Taught in This Department
7 - 26	Alphanumeric Departmental Description
29 - 33	FTE Administrators
34 - 38	Average Annual Administrator Salary
39 - 43	Department Chairman FTE
44 - 48	Average Annual Department Chairman Salary
49 - 56	Secretaries/Department Chairman
57 - 64	Secretaries/Faculty Member
65 - 72	Average Annual Secretarial Salary
73 - 80	Average Travel Expense per Faculty Member

Columns	Use
Card Type '08'	**Discipline Data, Card 1**
1 - 2	'08'
3 - 4	Department Number (of discipline)
5 - 6	Discipline Number (11 through 18)
7 - 26	Alphanumeric Discipline Description
29 - 33	Average Class Section Size
34 - 38	Average WCH/Class Section
39 - 43	Average WCH Faculty Load
49 - 56	Staffing Ratio, Faculty Rank 1
57 - 64	Staffing Ratio, Faculty Rank 2
65 - 72	Staffing Ratio, Faculty Rank 3
Card Type '09'	**Discipline Data, Card 2**
1 - 2	'09'
3 - 4	Department Number (of discipline)
5 - 6	Discipline Number (11 through 18)
49 - 56	Average Annual Faculty Salary, Rank 1
57 - 64	Average Annual Faculty Salary, Rank 2
65 - 72	Average Annual Faculty Salary, Rank 3
Card Type '11'	**Degree Data, Induced Course Load Vector**
1 - 2	'11'
3 - 4	Degree Number (21 through 28)
7 - 26	Alphanumeric Degree Description
29 - 33	Proportion of FTE's WCH in Discipline 11
34 - 38	Discipline 12
39 - 43	Discipline 13
44 - 48	Discipline 14
49 - 56	Discipline 15
57 - 64	Discipline 16
65 - 72	Discipline 17
73 - 80	Discipline 18
Card Type '12;	**Degree Data, WCH Per Degree**
1 - 2	'12'
29 - 33	Average WCH per FTE for Degree 21
34 - 38	Degree 22
39 - 43	Degree 23
44 - 48	Degree 24
49 - 56	Degree 25
57 - 64	Degree 26
65 - 72	Degree 27
73 - 80	Degree 28

Columns	Use
Card Type '14'	**Induced Course Load Vector**
1 - 2	'14'
5 - 6	Discipline Number (11 through 18)
29 - 33	WCH taken by FTE in Degree Program 21
34 - 38	Degree 22
39 - 43	Degree 23
44 - 48	Degree 24
49 - 56	Degree 25
57 - 64	Degree 26
65 - 72	Degree 27
73 - 80	Degree 28
Card Type '16'	**Degree Productive Index**
1 - 2	'16'
29 - 33	For Degree 21
34 - 38	Degree 22
39 - 43	Degree 23
44 - 48	Degree 24
49 - 56	Degree 25
57 - 64	Degree 26
65 - 72	Degree 27
73 - 80	Degree 28
Card Type '20'	**Departmental Data, Card 2**
1 - 2	'20'
3 - 4	Department Number (01 through 08)
44 - 48	Office Supplies, Cost per Faculty Member
49 - 56	Office Supplies, Cost per Secretary
57 - 64	Office Supplies, Fixed Cost
65 - 72	Instructional Supplies, Cost per WSCH
73 - 80	Instructional Supplies, Fixed Cost
Card Type '22'	**College Data, Card 1**
1 - 2	'22'
49 - 56	Library Cost per Discipline
57 - 64	Library, Fixed Cost
65 - 72	Central Administration, Cost per Faculty Member
73 - 80	Central Administration, Fixed Cost
Card Type '23'	
1 - 2	'23'
49 - 56	Physical Plant, Cost per Class Section
57 - 64	Physical Plant, Fixed Cost

Appendix C4

Control Card Formats

Columns	Use
UPDATE Control Card	
1 - 9	Not Used
10-15	PROCESSING DATE in YYMMDD format
16	Not Used
17-32	Written Date
33-34	Number of iterations - between 1 and 5 (default = 5)
35-54	Student or group name
55-58	Base year i.e. 1900, 2000 or 0 (default = 1900)
REPORTS Control Card	
1 - 9	Not Used
10-15	Process Date in YYMMDD format
16	Not Used
17-20	Number of copies (default - 1)

APPENDIX D 1

PROGRAM LISTING, CARD TO TAPE

```
      C     CARD TO TAPE PROGRAM FOR DEFAULT INFORMATION                          MU010005
      C                                                                           MU010010
      C                                                                           MU010015
      C                                                                           MU010020
      C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F        MU010025
      C     UNDER DOS LEVEL 19.                                                   MU010030
      C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                       MU010035
      C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.         MU010040
      C     FOR OPERATING INSTRUCTIONS SEE -                                      MU010045
      C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL              MU010050
      C                           INSTITUTION, USERS MANUAL                       MU010055
      C          BY COLBY H. SPRINGER, MARCH 1970                                 MU010060
      C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION       MU010065
      C          BOULDER, COLORADO  80302                                         MU010070
      C                                                                           MU010075
      C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                      MU010080
      C          NR OEC-0-8-980708-4533(010)                                      MU010085
      C                                                                           MU010090
      C                                                                           MU010095
0001          COMMON COLLD(12), PCCM(8,8), ENRL(5,9),                           MU010100
     1ICLM(8,10), DPI(8),   IWLM(8,10), BUFF1(71),                              MU010105
     2DEGRD(8,12), DISCD(8,24), DEPTD(8,24),                                    MU010110
     3DPTDS(8,5),        DISDS(8,5),DEGDS(8,5)                                  MU010115
      C                                                                         MU010120
0002          DIMENSION DESC(5)                                                 MU010125
0003          DIMENSION TYPE(8,9)                                               MU010130
      C                                                                         MU010135
0004          REAL DPTDS, DIDDS, DEGDS, DESC,ICLM,IWLM                          MU010140
0005          INTEGER CDID, DPTNO, DISNO                                        MU010145
0006          INTEGER*2 COLLD1, COLLD2, DEPTD1(8), DEPTD2(8),                   MU010150
     1DISCD1(8), DISCD2(8), FLAG1,FLAG2,FLAG3,DEG1(8),ENRL1,ENRL2               MU010155
0007          INTEGER*2 TYPE1,TYPE2                                             MU010160
0008          DATA BLANK/'    '/                                                MU010165
      C                                                                         MU010170
      C     ZERO OUT COMMON ARRAY AND DESCRIPTIONS                              MU010175
      C                                                                         MU010180
0009          DO 100 I=1,8                                                      MU010185
0010          DO 111 J=1,8                                                      MU010190
```

```
0011          111  PCCM(I,J)=0.0                                          MU010195
0012               DO 112 J=1,10                                         MU010200
0013               ICLM (I,J)=0.0                                        MU010205
0014               IWLM (I,J)=0.0                                        MU010210
0015          112  CONTINUE                                              MU010215
0016               DO 113 J=1,12                                         MU010220
0017          113  DEGRD(I,J)=0.0                                        MU010225
0018               DO 114 J=1,24                                         MU010230
0019               DISCD(I,J)=0.0                                        MU010235
0020               DEPTD(I,J)=0.0                                        MU010240
0021          114  CONTINUE                                              MU010245
0022               DO 115 J=1,5                                          MU010250
0023               DPTDS(I,J)=BLANK                                      MU010255
0024               DISDS(I,J)=BLANK                                      MU010260
0025               DEGDS(I,J)=BLANK                                      MU010265
0026          115  CONTINUE                                              MU010270
0027          10C  CONTINUE                                              MU010275
0028               DO 116 I=1,12                                         MU010280
0029          116  COLLD(I)=0.0                                          MU010285
0030               DO 117 I=1,8                                          MU010290
0031          117  DPI(I) = 0.0                                          MU010295
0032               DO 118 I=1,5                                          MU010300
0033               DO 118 J=1,9                                          MU010305
0034          118  ENRL(I,J)=0.0                                         MU010310
0035               DO 130 I=1,71                                         MU010315
0036          130  BUFF1(I) = 0.0                                        MU010320
0037               DO 131 I = 1,8                                        MU010325
0038               DO 131 J = 1,9                                        MU010330
0039          131  TYPE(I,J) = 0.0                                       MU010335
0040               TYPE1 = 0                                             MU010340
0041               TYPE2 = 0                                             MU010345
0042               ENRL1 = 0                                             MU010350
0043               ENRL2 = 0                                             MU010355
0044               COLLD1 = 0                                            MU010360
0045               COLLD2 = 0                                            MU010365
0046               DO 135 I=1,8                                          MU010370
0047               DEPTD1(I) = 0                                         MU010375
0048               DEPTD2(I) = 0                                         MU010380
```

```
0049                DISCD1(I) = 0                                                    MU010385
0050                DISCD2(I) = 0                                                    MU010390
0051             135  CONTINUE                                                      MU010395
                 C                                                                  MU010400
                 C                                                                  MU010405
0052             150  READ (1,1000, END=300) CDID,       DPTNO, DISNO, DESC, CHAR2,  MU010410
                    1FIVE1, FIVE2, FIVE3, FIVE4, EGHT1, EGHT2,EGHT3,EGHT4           MU010415
0053             1000 FORMAT (3I2, 5A4, F2.0, 4F5.0, 4F8.0)                         MU010420
                 C                                                                  MU010425
                 C                                                                  MU010430
0054                IF (CDID .EQ. 2 ) GO TO 2                                       MU010435
0055                IF (CDID .EQ. 3 ) GO TO 3                                       MU010440
0056                IF (CDID.EQ.6) GO TO 6                                          MU010445
0057                IF (CDID.EQ.8) GO TO 8                                          MU010450
0058                IF (CDID.EQ.9) GO TO 9                                          MU010455
0059                IF (CDID .EQ. 11) GO TO 11                                      MU010460
0060                IF (CDID .EQ. 12) GO TO 12                                      MU010465
0061                IF (CDID .EQ. 14) GO TO 14                                      MU010470
0062                IF (CDID .EQ. 16) GO TO 16                                      MU010475
0063                IF (CDID .EQ. 20) GO TO 20                                      MU010480
0064                IF (CDID .EQ. 22) GO TO 22                                      MU010485
0065                IF (CDID .EQ. 23) GO TO 23                                      MU010490
0066                WRITE (3,1001) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,          MU010495
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4                 MU010500
0067             1001 FORMAT(5X,3I2,5A4,F2.0,4F5.0,4F8.0,10X,                       MU010505
                   1'INVALID CARD TYPE COL 1-2')                                    MU010510
0068                GO TO 150                                                       MU010515
                 C                                                                  MU010520
                 C     ENROLLMENT DATA - CARD 1                                     MU010525
                 C                                                                  MU010530
0069             2  ENRL(1,1) = FIVE1                                              MU010535
0070                BUFF1(1) = 1900 + DPTNO                                         MU010540
0071                ENRL(1,2) = FIVE2                                               MU010545
0072                ENRL(1,3) = FIVE3                                               MU010550
0073                ENRL(1,4) = FIVE4                                               MU010555
0074                ENRL1 = 1                                                       MU010560
0075                GO TO 150                                                       MU010565
                 C                                                                  MU010570
```

```
                C       ENROLLMENT INFO - CARD 2                                MU010575
                C                                                               MU010580
0076              5     ENRL(1,5) = FIVE1                                       MU010585
0077                    BUFF1(1) = 1900 + DPTNO                                 MU010590
0078                    ENRL(1,6) = FIVE2                                       MU010595
0079                    ENRL(1,8) = FIVE4                                       MU010600
0080                    ENRL(1,9) = EGHT1                                       MU010605
0081                    ENRL2 = 1                                               MU010610
0082                    GO TO 150                                               MU010615
                C                                                               MU010620
                C       COLLEGE INFO - CARD 1                                   MU010625
                C                                                               MU010630
0083              22    COLLD(2)=EGHT1                                          MU010635
0084                    COLLD(3)=EGHT2                                          MU010640
0085                    COLLD(5)=EGHT3                                          MU010645
0086                    COLLD(6)=EGHT4                                          MU010650
0087                    COLLD1=1                                                MU010655
0088                    GO TO 150                                               MU010660
                C                                                               MU010665
                C       COLLEGE INFO CARD 2                                     MU010670
                C                                                               MU010675
0089              23    COLLD(8)=EGHT1                                          MU010680
0090                    COLLD(9)=EGHT2                                          MU010685
0091                    COLLD2=1                                                MU010690
0092                    GO TO 150                                               MU010695
                C                                                               MU010700
                C       DEPARTMENT INFO CARD1                                   MU010705
                C                                                               MU010710
0093              6     DEPTD(DPTNO,1)=DPTNO                                    MU010715
0094                    DEPTD(DPTNO,3)=DISNO                                    MU010720
0095                    DEPTD(DPTNO,4)=FIVE1                                    MU010725
0096                    DEPTD(DPTNO,5)=FIVE2                                    MU010730
0097                    DEPTD(DPTNO,6)=FIVE3                                    MU010735
0098                    DEPTD(DPTNO,7)=FIVE4                                    MU010740
0099                    DEPTD(DPTNO,8)=EGHT2                                    MU010745
0100                    DEPTD(DPTNO,9)=EGHT3                                    MU010750
0101                    DEPTD(DPTNO,11) = EGHT4                                 MU010755
0102                    DEPTD(DPTNO,22) = EGHT1                                 MU010760
```

```
0103              DO 120 I=1,5                                                  MU010765
0104        120   DPTDS (DPTNO,I)=DESC(I)                                       MU010770
0105              DEPTD1(DPTNO)=1                                               MU010775
0106              GO TO 150                                                     MU010780
            C                                                                   MU010785
            C     DEPARTMENT-INFO CARD 2                                        MU010790
            C                                                                   MU010795
0107         20   DEPTD(DPTNO,13)=FIVE4                                         MU010800
0108              DEPTD(DPTNO,14)=EGHT1                                         MU010805
0109              DEPTD(DPTNO,15)=EGHT2                                         MU010810
0110              DEPTD(DPTNO,17)=EGHT3                                         MU010815
0111              DEPTD(DPTNO,18)=EGHT4                                         MU010820
0112              DEPTD2(DPTNO)=1                                               MU010825
0113              GO TO 150                                                     MU010830
            C                                                                   MU010835
            C     DISCIPLINE INFO CARD 1                                        MU010840
            C                                                                   MU010845
0114          8   J=DISNO-10.0                                                  MU010850
0115              DISCD(J,3)=DPTNO                                              MU010855
0116              DISCD(J,4)=FIVE1                                              MU010860
0117              DISCD(J,2)=FIVE2                                              MU010865
0118              DISCD(J,5)=FIVE3                                              MU010870
0119              DISCD(J,11)=EGHT1                                             MU010875
0120              DISCD(J,14)=EGHT2                                             MU010880
0121              DISCD(J,17)=EGHT3                                             MU010885
0122              DO 121 I=1,5                                                  MU010890
0123        121   DISDS (J,I)=DESC(I)                                           MU010895
0124              DISCD1(J)=1                                                   MU010900
0125              GO TO 150                                                     MU010905
            C                                                                   MU010910
            C     DISCIPLINE INFO CARD 2                                        MU010915
            C                                                                   MU010920
0126          9   J=DISNO-10.0                                                  MU010925
0127              DISCD(J,12)=FIVE1                                             MU010930
0128              DISCD(J,15)=FIVE2                                             MU010935
0129              DISCD(J,18)=FIVE3                                             MU010940
0130              DISCD(J,13)=EGHT1                                             MU010945
0131              DISCD(J,16)=EGHT2                                             MU010950
```

```
0132                DISCD(J,19)=EGHT3                                          MU010955
0133                DISCD2(J)=1                                                MU010960
0134                GO TO 150                                                  MU010965
                C                                                              MU010970
                C       DEGREE INFO                                            MU010975
                C                                                              MU010980
0135             11 J=DPTNO-20.0                                               MU010985
0136                DO 122 I=1,5                                               MU010990
0137             122 DEGDS(J,I)=DESC(I)                                        MU010995
                C       TYPE I COEFFICIENTS                                    MU011000
0138                TYPE(J,1) = FIVE1                                          MU011005
0139                TYPE(J,2) = FIVE2                                          MU011010
0140                TYPE(J,3) = FIVE3                                          MU011015
0141                TYPE(J,4) = FIVE4                                          MU011020
0142                TYPE(J,5) = EGHT1                                          MU011025
0143                TYPE(J,6) = EGHT2                                          MU011030
0144                TYPE(J,7) = EGHT3                                          MU011035
0145                TYPE(J,8) = EGHT4                                          MU011040
0146                GO TO 150                                                  MU011045
                C                                                              MU011050
                C       TOTAL WSCH / DEGREE / FTE STUDENT                      MU011055
                C                                                              MU011060
0147             12 TYPE(1,9) = FIVE1                                          MU011065
0148                TYPE(2,9) = FIVE2                                          MU011070
0149                TYPE(3,9) = FIVE3                                          MU011075
0150                TYPE(4,9) = FIVE4                                          MU011080
0151                TYPE(5,9) = EGHT1                                          MU011085
0152                TYPE(6,9) = EGHT2                                          MU011090
0153                TYPE(7,9) = EGHT3                                          MU011095
0154                TYPE(8,9) = EGHT4                                          MU011100
0155                TYPE2 = 1                                                  MU011105
0156                GO TO 150                                                  MU011110
                C                                                              MU011115
                C       COURSE LOAD MATRIX INFO                                MU011120
                C                                                              MU011125
0157             14 J=DISNO-10.0                                               MU011130
0158                ICLM(J,1)=FIVE1                                            MU011135
0159                ICLM(J,2)=FIVE2                                            MU011140
```

```
0160                ICLM(J,3)=FIVE3                                          MU011145
0161                ICLM(J,4)=FIVE4                                          MU011150
0162                ICLM(J,5)=EGHT1                                          MU011155
0163                ICLM(J,6)=EGHT2                                          MU011160
0164                ICLM(J,7)=EGHT3                                          MU011165
0165                ICLM(J,8)=EGHT4                                          MU011170
0166                TYPE1 = 1                                                MU011175
0167                GO TO 150                                                MU011180
                C                                                            MU011185
                C     DEGREE PRODUCTIVITY INDEX                              MU011190
                C                                                            MU011195
0168             16 DPI(1) = FIVE1                                           MU011200
0169                DPI(2) = FIVE2                                           MU011205
0170                DPI(3) = FIVE3                                           MU011210
0171                DPI(4) = FIVE4                                           MU011215
0172                DPI(5) = EGHT1                                           MU011220
0173                DPI(6) = EGHT2                                           MU011225
0174                DPI(7) = EGHT3                                           MU011230
0175                DPI(8) = EGHT4                                           MU011235
0176                GO TO 150                                                MU011240
                C                                                            MU011245
                C     CHECK TO SEE IF INFO HAS ALL BEEN INPUT.               MU011250
                C                                                            MU011255
0177             300 FLAG1 = 0                                               MU011260
0178                 FLAG2 = 0                                               MU011265
0179                 FLAG3 = 0                                               MU011270
0180                 DO 320 I=1,8                                            MU011275
0181                 IF (DEPTD1(I).NE.DEPTD2(I)) FLAG2=1                     MU011280
0182                 IF (DISCD1(I).NE.DISCD2(I)) FLAG3=1                     MU011285
0183             320 CONTINUE                                                MU011290
0184                 IF (COLLD1.NE.COLLD2) FLAG1=1                           MU011295
0185                 IF (FLAG1.NE.1) GO TO 325                               MU011300
0186                 WRITE (3,1005)                                          MU011305
0187             1005 FORMAT (// 5X,'MISSING 22 OR 23 CARD')                 MU011310
0188             325 IF (FLAG2.NE.1) GO TO 330                               MU011315
0189                 WRITE (3,1006)                                          MU011320
0190             1006 FORMAT (//5X,'MISSING 6 OR 20 CARD')                   MU011325
0191             330 IF (FLAG3.NE.1) GO TO 335                               MU011330
```

```
0192              WRITE (3,1007)                                                  MU011335
0193         1007 FORMAT (// 5X, 'MISSING 8 OR 9 CARD')                           MU011340
0194              IF (ENRL1 .NE. ENRL2) WRITE (3,1008)                            MU011345
0195         1008 FORMAT (// 5X,'MISSING 2 OR 3 CARD')                            MU011350
            C                                                                     MU011355
            C     WRITE COMMON AREA ON TO TAPE                                    MU011360
            C                                                                     MU011365
0196          335 CONTINUE                                                        MU011370
0197              IF (TYPE1 .NE. TYPE2) GO TO 360                                 MU011375
0198              DO 345 I = 1,8                                                  MU011380
0199              DO 345 J = 1,8                                                  MU011385
0200          345 ICLM(J,I) = TYPE(I,J) * TYPE(I,9)                               MU011390
0201          360 CONTINUE                                                        MU011395
0202              WRITE (6) COLLD, PCCM, ENRL, ICLM, DPI,                         MU011400
                 1IWLM, BUFF1, DEGRD, DISCD,                                      MU011405
                 2DEPTD,          DPTDS, DISDS, DEGDS                             MU011410
0203              WRITE (3,9000)                                                  MU011415
0204         9000 FORMAT (1H1, 'LISTING OF DATA BLOCK FOLLOWS - ' / 1H0 )        MU011420
0205              WRITE (3,9001) COLLD                                            MU011425
0206         9001 FORMAT (1H0, 'COLLD'/ 1H , 6F12.4 / 1H , 6F12.4 )               MU011430
0207              WRITE (3,9002) PCCM                                             MU011435
0208         9002 FORMAT (1H0, 'PCCM', /  8(8F12.4/))                             MU011440
0209              WRITE (3,9003) ENRL                                             MU011445
0210         9003 FORMAT (1H0, 'ENRL', /  9(5F12.4/))                             MU011450
0211              WRITE (3,9004) ICLM                                             MU011455
0212         9004 FORMAT (1H0, 'ICLM' / 10(8F12.4 /))                             MU011460
0213              WRITE (3,9005) DPI                                              MU011465
0214         9005 FORMAT (1H1, 'DPI  ' / 8F12.4)                                  MU011470
0215              WRITE (3,9006) IWLM                                             MU011475
0216         9006 FORMAT (1H0, 'IWLM' / 10(8F12.4 /))                             MU011480
0217              WRITE (3,9007) BUFF1                                            MU011485
0218         9007 FORMAT (1H0, 'BUFF1' / F12.4,5X,5A4 / 9(7F12.4 /),2F12.4)       MU011490
0219              WRITE (3,9008) DEGRD                                            MU011495
0220         9008 FORMAT (1H0, 'DEGRD' / 12(8F10.2  / ))                          MU011500
0221              WRITE (3,9009) DISCD                                            MU011505
0222         9009 FORMAT (1H1, 'DISCD' / 24 (8F12.4 / ))                          MU011510
0223              WRITE (3,9010) DEPTD                                            MU011515
0224         9010 FORMAT (1H1, 'DEPTD' / 24(8F12.4 / ))                           MU011520
```

```
0225              WRITE (3,9011) ((DPTDS(I,J), J=1,5) , I = 1,8)                    MU011525
0226         9011 FORMAT (1H0, 'DPTDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))          MU011530
0227              WRITE (3, 9012) ((DISDS(I,J) , J = 1,5 ) , I = 1,8)               MU011535
0228         9012 FORMAT (1H0, 'DISDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))          MU011540
0229              WRITE (3, 9013) ((DEGDS(I,J) , J = 1,5 ) , I = 1,8)               MU011545
0230         9013 FORMAT (1H0, 'DEGDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))          MU011550
0231              WRITE (3,9020)                                                    MU011555
0232         9020 FORMAT (1H1)                                                      MU011560
            C                                                                       MU011565
            C                                                                       MU011570
0233              END FILE 6                                                        MU011575
0234              REWIND 6                                                          MU011580
0235              CALL EXIT                                                         MU011585
0236              END                                                               MU011590
```

COMMON BLOCK / / MAP SIZE F00

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
CCLLD	0	PCCM	30	ENRL	130	ICLM	1E4	DPI	324
IWLM	344	BUFF1	484	DEGRD	5A0	DISCD	720	DEPTD	A20
DPTDS	D20	DISDS	DC0	DEGDS	E60				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
BLANK	1D8	I	1DC	J	1E0	CDID	1E4	DPTNO	1E8
DISNO	1EC	CHAR2	1FC	FIVE1	1F4	FIVE2	1F8	FIVE3	1FC
FIVE4	200	EGHT1	204	EGHT2	208	EGHT3	20C	EGHT4	210
TYPE1	214	TYPE2	216	ENRL1	218	ENRL2	21A	COLLD1	21C
COLLD2	21E	FLAG1	220	FLAG2	222	FLAG3	224		

ARRAY MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
DESC	228	TYPE	23C	DEPTD1	35C	DEPTD2	36C	DISCD1	37C
DISCD2	38C	DEG1	39C						

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	3AC	EXIT	3B0						

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1000	384	1001	3CB	1005	401	1006	41E	1007	43A
1008	455	9000	470	9001	49B	9002	4B9	9003	4CE
9004	4E3	9005	4F8	9006	50A	9007	51F	9008	544
9009	55A	9010	57C	9011	586	9012	5AC	9013	5D2
9020	5F8								

TOTAL MEMORY REQUIREMENTS 0016E8 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

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APPENDIX D 2

PROGRAM LISTING, UPDATE, MAINPGM

```
                C     MAIN CALLING PROGRAM                                                          MU020005
                C                                                                                   MU020010
                C                                                                                   MU020015
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F                 MU020020
                C     UNDER DOS LEVEL 19.                                                           MU020025
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                               MU020030
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.                 MU020035
                C     FOR OPERATING INSTRUCTIONS SEE -                                              MU020040
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL                      MU020045
                C                           INSTITUTION, USERS MANUAL                               MU020050
                C          BY COLBY H. SPRINGER, MARCH 1970                                         MU020055
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION               MU020060
                C          BOULDER, COLORADO  80302                                                 MU020065
                C                                                                                   MU020070
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                              MU020075
                C          NR OEC-0-8-980708-4533(010)                                              MU020080
                C                                                                                   MU020085
                C                                                                                   MU020090
0001                     COMMON COLLD(12), PCCM(8,8), ENRL(5,9),                                    MU020095
                        1ICLM(8,10), DPI(8),   IWLM(8,10), BUFFI(71),                               MU020100
                        2DEGRD(8,12), DISCD(8,24), DEPTD(8,24),                                     MU020105
                        3DPTDS(8,5),        DISDS(8,5),DEGDS(8,5)                                   MU020110
0002                     COMMON COLLDN(12), PCCMN(8,8),ENRLN(5,9),ICLMN(8,10),DPIN(8),              MU020115
                        1IWLMN(8,10),BUFFIN(71),DEGRDN(8,12),DISCDN(8,24),DEPTDN(8,24),             MU020120
                        2DPTDSN(8,5),DISDSN(8,5),DEGDSN(8,5)                                        MU020125
0003                     DIMENSION DESC(5),PERD(4), NAME(5)                                         MU020130
0004                     REAL DPTDS, DIDDS, DEGDS, DESC,ICLM,IWLM,NAME,ICLMN,IWLMN                  MU020135
0005                     REAL YY,MM,DD                                                              MU020140
0006                     INTEGER CDID, DPTNO, DISNO                                                 MU020145
                C                                                                                   MU020150
                C     READ CONTROL CARD                                                             MU020155
                C                                                                                   MU020160
0007                     READ (1,200) YY,MM,DD,PERD, ITER,NAME,BYEAR                                MU020165
0008              200    FORMAT (9X,3A2,1X,4A4,I2,5A4,F4.0)                                         MU020170
0009                     IF (ITER .GT. 5) ITER = 5                                                  MU020175
0010                     IF (ITER .EQ. 0) ITER = 5                                                  MU020180
0011                     WRITE (3,989)                                                              MU020185
0012              989    FORMAT (1H1 )                                                              MU020190
```

```
                C
                C       READ IN INTIAL VALUES OF COMMON FROM TAPE
                C
0013                    REWIND 6
0014                    READ (6) COLLD, PCCM, ENRL, ICLM, DPI,    IWLM,
                       1BUFF1, DEGRD, DISCD, DEPTD,
                       2DPTDS, DISDS, DEGDS
0015                    REWIND 6
0016                    DO 120 I = 1,5
0017                 120 BUFF1( 1 + I) = NAME(I)
0018                    IF (BYEAR .EQ. 0.0) GO TO 202
0019                    BUFF1(7) = BYEAR
0020                    GO TO 203
0021                 202 BUFF1(7) = 1900.0
0022                 203 CONTINUE
                C
                C       SET UP TO DO ITERATION OF PROGRAM
                C       AS SPECIFIED ON CONTROL CARD
                C
0023                    DO 8000  M=1, ITER
0024                    CALL UPDATE
                C       WRITE (3,9000)
0025                 9000 FORMAT (1H1, 'LISTING OF DATA BLOCK FOLLOWS - ' / 1H0 )
                C       WRITE (3,9001) COLLD
0026                 9001 FORMAT (1H0, 'COLLD'/ 1H , 6F12.4 / 1H , 6F12.4 )
                C       WRITE (3,9002) PCCM
0027                 9002 FORMAT (1H0, 'PCCM', /  8(8F12.4/))
                C       WRITE (3,9003) ENRL
0028                 9003 FORMAT (1H0, 'ENRL', /  9(5F12.4/))
                C       WRITE (3,9004) ICLM
0029                 9004 FORMAT (1H0, 'ICLM' / 10(8F12.4 /))
                C       WRITE (3,9005) DPI
0030                 9005 FORMAT (1H1, 'DPI  ' / 8F12.4)
                C       WRITE (3,9006) IWLM
0031                 9006 FORMAT (1H0, 'IWLM' / 10(8F12.4 /))
                C       WRITE (3,9007) BUFF1
0032                 9007 FORMAT (1H0, 'BUFF1' / F12.4,5X,5A4 / 9(7F12.4 /),2F12.4)
                C       WRITE (3,9008) DEGRD
```

```
0033          9008 FORMAT (1H0, 'DEGRD' / 12(8F10.2  / ))                                    MU020385
              C    WRITE (3,9009) DISCD                                                      MU020390
0034          9009 FORMAT (1H1, 'DISCD' / 24 (8F12.4 / ))                                    MU020395
              C    WRITE (3,9010) DEPTD                                                      MU020400
0035          9010 FORMAT (1H1, 'DEPTD' / 24(8F12.4 / ))                                     MU020405
              C    WRITE (3,9011) ((DPTDS(I,J), J=1,5) , I = 1,8)                            MU020410
0036          901. FORMAT (1H0, 'DPTDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))                  MU020415
              C    WRITE (3, 9012) ((DISDS(I,J) , J = 1,5 ) , I = 1,8)                       MU020420
0037          9012 FORMAT (1H0, 'DISDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))                  MU020425
              C    WRITE (3, 9013) ((DEGDS(I,J) , J = 1,5 ) , I = 1,8)                       MU020430
0038          9013 FORMAT (1H0, 'DEGDS'/ 1H , 4(5A4, 2X) / 1H , 4(5A4, 2X))                  MU020435
              C    WRITE (3,9020)                                                            MU020440
0039          9020 FORMAT (1H1)                                                              MU020445
0040               CALL CALC                                                                 MU020450
0041               WRITE (3,9000)                                                            MU020455
0042               WRITE (3,9001) COLLD                                                      MU020460
0043               WRITE (3,9002) PCCM                                                       MU020465
0044               WRITE (3,9003) ENRL                                                       MU020470
0045               WRITE (3,9004) ICLM                                                       MU020475
0046               WRITE (3,9005) DPI                                                        MU020480
0047               WRITE (3,9006) IWLM                                                       MU020485
0048               WRITE (3,9007) BUFF1                                                      MU020490
0049               WRITE (3,9008) DEGRD                                                      MU020495
0050               WRITE (3,9009) DISCD                                                      MU020500
0051               WRITE (3,9010) DEPTD                                                      MU020505
0052               WRITE (3,9011) ((DPTDS(I,J), J=1,5) , I = 1,8)                            MU020510
0053               WRITE (3, 9012) ((DISDS(I,J) , J = 1,5 ) , I = 1,8)                       MU020515
0054               WRITE (3, 9013) ((DEGDS(I,J) , J = 1,5 ) , I = 1,8)                       MU020520
0055               WRITE (3,9020)                                                            MU020525
              C                                                                              MU020530
              C    WRITE COMMON AREA ON TAPE                                                 MU020535
              C                                                                              MU020540
0056               WRITE (7) COLLD,PCCM,ENRL,ICLM,DPI,   IWLM,BUFF1,DEGRD,DISCD,            MU020545
                  1DEPTD,DPTDS,DISDS,DEGDS                                                   MU020550
0057          8000 CONTINUE                                                                  MU020555
              C                                                                              MU020560
0058               END FILE 7                                                                MU020565
0059               REWIND 7                                                                  MU020570
```

```
0060              WRITE (3,989)                                    MU020575
0061              CALL EXIT                                        MU020580
0062              END                                              MU020585
```

DOS FORTRAN IV 360N-FO-479 3-0 MAINPGM DATE 03/23/70 TIME 16.38.50 PAGE 0005

COMMON BLOCK / / MAP SIZE 1E00

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD	0	PCCM	30	ENRL	130	ICLM	1E4	DPI	324
IWLM	344	BUFFI	484	DEGRD	5A0	DISCD	720	DEPTD	A20
DPTDS	D20	DISDS	DC0	DEGDS	E60	COLLDN	F00	PCCMN	F30
ENRLN	1030	ICLMN	10E4	DPIN	1224	IWLMN	1244	BUFFIN	1384
DEGRDN	14A0	DISCDN	1620	DEPTDN	1920	DPTDSN	1C20	DISDSN	1CC0
DEGDSN	1D60								

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
YY	D0	MM	D4	DD	D8	ITER	DC	BYEAR	E0
I	E4	M	E8	J	EC				

ARRAY MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
DESC	F0	PERD	104	NAME	114				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	128	UPDATE	12C	CALC	130	EXIT	134		

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
200	138	989	14F	9000	154	9001	17F	9002	19D
9003	1B2	9004	1C7	9005	[illegible]	9006	1EE	9007	203
9008	228	9009	23E	9010	[illegible]	9011	26A	9012	290
9013	2B6	9020	2DC						

TOTAL MEMORY REQUIREMENTS 0008E8 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 3

PROGRAM LISTING, UPDATE, UPDATE

```
0001            SUBROUTINE UPDATE                                                MU030005
                C   SUBROUTINE TO UPDATE MATRICES                                 MU030010
                C                                                                 MU030015
                C                                                                 MU030020
                C   THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F MU030025
                C   UNDER DOS LEVEL 19.                                          MU030030
                C   ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.               MU030035
                C   THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970. MU030040
                C   FOR OPERATING INSTRUCTIONS SEE -                             MU030045
                C        MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL     MU030050
                C                         INSTITUTION, USERS MANUAL              MU030055
                C        BY COLBY H. SPRINGER, MARCH 1970                        MU030060
                C        FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION MU030065
                C        BOULDER, COLORADO  80302                                MU030070
                C                                                                MU030075
                C   PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT             MU030080
                C        NR OEC-0-8-980708-4533(010)                             MU030085
                C                                                                MU030090
                C                                                                MU030095
0002             COMMON COLLD(12), PCCM(8,8), ENRL(5,9),                         MU030100
                1ICLM(8,10), DPI(8),   IWLM(8,10), BUFF1(71),                    MU030105
                2DEGRD(8,12), DISCD(8,24), DEPTD(8,24),                          MU030110
                3DPTDS(8,5),         DISDS(8,5),DEGDS(8,5)                       MU030115
0003             COMMON COLLDN(12), PCCMN(8,8),ENRLN(5,9),ICLMN(8,10),DPIN(8),   MU030120
                1IWLMN(8,10),BUFF1N(71),DEGRDN(8,12),DISCDN(8,24),DEPTDN(8,24),  MU030125
                2DPTDSN(8,5),DISDSN(8,5),DEGDSN(8,5)                             MU030130
0004             DIMENSION DESC(5)                                               MU030135
0005             DIMENSION AREA1(8),AREA2(8),TYPE(8,9)                           MU030140
0006             REAL DPTDS, DISDS, DEGDS, DESC,ICLM,IWLM,ICLMN,IWLMN            MU030145
0007             INTEGER CDID, DPTNO, DISNO                                      MU030150
0008             INTEGER*2 COLLD1, COLLD2, DEPTD1(8), DEPTD2(8),                 MU030155
                1DISCD1(8), DISCD2(8), FLAG1,FLAG2,FLAG3,DEG1(8),ICLM1(8)        MU030160
0009             INTEGER*2 TYPE1,TYPE2,DPI1                                      MU030165
0010             DATA BLANK/'    '/                                              MU030170
                C                                                                MU030175
                C   ZERO OUT COMMON ARRAY AND DESCRIPTIONS                       MU030180
                C                                                                MU030185
0011             DO 100 I=1,8                                                    MU030190
```

```
0012              DO 111 J=1,8                                                  MU030195
0013        111   PCCMN(I,J)=0.0                                                MU030200
0014              DO 112 J=1,10                                                 MU030205
0015              ICLMN(I,J)=0.0                                                MU030210
0016              IWLMN(I,J)=0.0                                                MU030215
0017        112   CONTINUE                                                      MU030220
0018              DO 113 J=1,12                                                 MU030225
0019        113   DEGRDN(I,J)=0.0                                               MU030230
0020              DO 114 J=1,24                                                 MU030235
0021              DISCDN(I,J)=0.0                                               MU030240
0022              DEPTDN(I,J)=0.0                                               MU030245
0023        114   CONTINUE                                                      MU030250
0024              DO 115 J=1,5                                                  MU030255
0025              DPTDSN(I,J)=BLANK                                             MU030260
0026              DISDSN(I,J)=BLANK                                             MU030265
0027              DEGDSN(I,J)=BLANK                                             MU030270
0028        115   CONTINUE                                                      MU030275
0029        100   CONTINUE                                                      MU030280
0030              DO 116 I=1,12                                                 MU030285
0031        116   COLLDN(I)=0.0                                                 MU030290
0032              DO 117 I=1,8                                                  MU030295
0033        117   DPIN(I) = 0.0                                                 MU030300
0034              DO 118 I=1,5                                                  MU030305
0035              DO 118 J=1,9                                                  MU030310
0036        118   ENRLN(I,J)=0.0                                                MU030315
0037              DO 130 I=1,71                                                 MU030320
0038        130   BUFF1N(I) = 0.0                                               MU030325
            C     MOVE STUDENT NAME TO AREA IN BUFF1N FROM BUFF1                MU030330
0039              DO 132 I = 2,6                                                MU030335
0040        132   BUFF1N(I) = BUFF1(I)                                          MU030340
            C     MOVE BASE YEAR TO BUFF1N                                      MU030345
0041              BUFF1N(7) = BUFF1(7)                                          MU030350
0042              DO 134 I = 1,8                                                MU030355
0043              DO 134 J = 1,9                                                MU030360
0044              TYPE(I,J) = 0.0                                               MU030365
0045        134   CONTINUE                                                      MU030370
0046              DPI1 = 0                                                      MU030375
0047              TYPE1 = 0                                                     MU030380
```

```
0048                TYPE2 = 0                                                  MU030385
0049                ENRL1 = 0                                                  MU030390
0050                ENRL2 = 0                                                  MU030395
0051                SPERS1 = 0                                                 MU030400
0052                COLLD1 = 0                                                 MU030405
0053                COLLD2 = 0                                                 MU030410
0054                DO 135 I=1,8                                               MU030415
0055                DEPTD1(I) = 0                                              MU030420
0056                DEPTD2(I) = 0                                              MU030425
0057                DISCD1(I) = 0                                              MU030430
0058                DISCD2(I) = 0                                              MU030435
0059                DEG1(I) = 0                                                MU030440
0060                ICLM1(I) = 0                                               MU030445
0061          135   CONTINUE                                                   MU030450
                C                                                              MU030455
                C     READ DATA CARDS TO UPDATE THE MATRICES                   MU030460
                C                                                              MU030465
0062          1000  READ (1,201, END=2000)                                     MU030470
                       2CDID, DPTNO, DISNO, DESC, CHAR2,                       MU030475
                       3FIVE1, FIVE2, FIVE3, FIVE4, EGHT1,                     MU030480
                       4EGHT2, EGHT3, EGHT4                                    MU030485
0063           201   FORMAT (3I2, 5A4, F2.0, 4F5.0, 4F8.0)                      MU030490
                C                                                              MU030495
                C     TEST FOR CARD TYPE                                       MU030500
                C                                                              MU030505
0064                  IF (CDID.EQ. 2) GO TO 2                                  MU030510
0065                  IF (CDID.EQ. 3) GO TO 3                                  MU030515
0066                  IF (CDID.EQ. 6) GO TO 6                                  MU030520
0067                  IF (CDID.EQ. 8) GO TO 8                                  MU030525
0068                  IF (CDID.EQ. 9) GO TO 9                                  MU030530
0069                  IF (CDID .EQ. 11) GO TO 11                               MU030535
0070                  IF (CDID .EQ. 12) GO TO 12                               MU030540
0071                  IF (CDID .EQ. 14) GO TO 14                               MU030545
0072                  IF (CDID .EQ. 16) GO TO 16                               MU030550
0073                  IF (CDID .EQ. 20) GO TO 20                               MU030555
0074                  IF (CDID .EQ. 22) GO TO 22                               MU030560
0075                  IF (CDID .EQ. 23) GO TO 23                               MU030565
0076                  WRITE (3,300) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,    MU030570
```


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```
                1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4                MU030575
                                                                                MU030580
0077             300  FORMAT (5X,312,5A4,F2.0,4F5.0,4F8.0,10X,                  MU030585
                1'INVALID CARD TYPE-COL 1-2')                                   MU030590
0078                  GO TO 1000                                                MU030595
                C                                                               MU030600
                C     COLLEGE INFO-CARD1                                        MU030605
                C                                                               MU030610
0079             22   COLLDN (2)=EGHT1                                          MU030615
0080                  COLLDN(3)=EGHT2                                           MU030620
0081                  COLLDN(5)=EGHT3                                           MU030625
0082                  COLLDN(6)=EGHT4                                           MU030630
0083                  COLLD1=1                                                  MU030635
0084                  GO TO 1000                                                MU030640
                C                                                               MU030645
                C     COLLEGE INFO-CARD2                                        MU030650
                C                                                               MU030655
0085             23   COLLDN(8)=EGHT1                                           MU030660
0086                  COLLDN(9)=EGHT2                                           MU030665
0087                  COLLD2=1                                                  MU030670
0088                  GO TO 1000                                                MU030675
                C                                                               MU030680
                C     DEPARTMENT INFO-CARD1                                     MU030685
                C                                                               MU030690
0089                6 CONTINUE                                                  MU030695
0090                  IF (DPTNO .GT. 0.0 .AND. DPTNO .LE. 8.0) GO TO 398        MU030700
0091                  WRITE (3,202) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,     MU030705
                     1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4           MU030710
0092             202  FORMAT (5X,3I2,5A4,F2.0,4F5.0,4F8.0,10X,                  MU030715
                1'INVALID DEPARTMENT NUMBER')                                   MU030720
0093                  GO TO 1000                                                MU030725
0094             398  CONTINUE                                                  MU030730
0095                  DEPTDN(DPTNO,1)=DPTNO                                     MU030735
0096                  GO TO 401                                                 MU030740
0097             401  IF(DISNO .EQ. 0.0) GO TO 405                              MU030745
0098                  IF(DISNO .GT. 0.0) GO TO 404                              MU030750
0099                  DEPTDN(DPTNO,3)=0.0                                       MU030755
0100                  GO TO 406                                                 MU030760
0101             404  DEPTDN(DPTNO,3)=DISNO
```

```
0140                IF(EGHT3 .GT. 0.0) GO TO 434                                MU030955
0141                DEPTDN(DPTNO,9)=0.0                                         MU030960
0142                GO TO 436                                                   MU030965
0143          434   DEPTDN(DPTNO,9)=EGHT3                                       MU030970
0144                GO TO 436                                                   MU030975
0145          435   DEPTDN(DPTNO,9)=DEPTD(DPTNO,9)                              MU030980
0146          436   IF(EGHT4 .EQ. 0.0) GO TO 440                                MU030985
0147                IF(EGHT4 .GT. 0.0) GO TO 439                                MU030990
0148                DEPTDN(DPTNO,11)=0.0                                        MU030995
0149                GO TO 441                                                   MU031000
0150          439   DEPTDN(DPTNO,11)=EGHT4                                      MU031005
0151                GO TO 441                                                   MU031010
0152          440   DEPTDN(DPTNO,11)=DEPTD(DPTNO,11)                            MU031015
0153          441   IF(DESC(1) .EQ. BLANK  ) GO TO 445                          MU031020
0154                DO 443 I= 1,5                                               MU031025
0155          443   DPTDSN(DPTNO,I)=DESC(I)                                     MU031030
0156                GO TO 447                                                   MU031035
0157          445   DO 446 I=1,5                                                MU031040
0158          446   DPTDSN(DPTNO,I)=DPTDS(DPTNO,I)                              MU031045
0159          447   DEPTD1(DPTNO) = 1                                           MU031050
0160                IF (EGHT1 .EQ. 0.0) GO TO 850                               MU031055
0161                IF (EGHT1 .GT. 0.0) GO TO 849                               MU031060
0162                DEPTDN(DPTNO,22) = 0.0                                      MU031065
0163                GO TO 851                                                   MU031070
0164          849   DEPTDN(DPTNO,22) = EGHT1                                    MU031075
0165                GO TO 851                                                   MU031080
0166          850   DEPTDN(DPTNO,22) = DEPTD(DPTNO,22)                          MU031085
0167          851   CONTINUE                                                    MU031090
0168                GO TO 1000                                                  MU031095
                C                                                               MU031100
                C     DEPARTMENT INFO-CARD2                                     MU031105
                C                                                               MU031110
0169           20   CONTINUE                                                    MU031115
0170                IF (DPTNO .GT. 0.) .AND. DPTNO .LE. 8.0) GO TO 448          MU031120
0171                WRITE (3,202) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,       MU031125
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4             MU031130
0172                GO TO 1000                                                  MU031135
0173          448   CONTINUE                                                    MU031140
```

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0174                DEPTDN(DPTNO,13)=FIVE4                                    MU031145
0175                DEPTDN(DPTNO,14) =EGHT1                                   MU031150
0176                DEPTDN(DPTNO,15) =EGHT2                                   MU031155
0177                DEPTDN(DPTNO,17)=EGHT3                                    MU031160
0178                DEPTDN(DPTNO,18)=EGHT4                                    MU031165
0179                DEPTD2(DPTNO)=1                                           MU031170
0180                GO TO 1000                                                MU031175
                C                                                             MU031180
                C     DISCIPLINE INFO-CARD1                                   MU031185
                C                                                             MU031190
0181             8  J=DISNO-10.0                                             MU031195
0182                IF (J .GT. 0.0 .AND. J .LE. 8.0) GO TO 452                MU031200
0183                WRITE (3,203) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,     MU031205
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4           MU031210
0184             203  FORMAT (5X,3I2,5A4,F2.0,4F5.0,4F8.0,10X,                MU031215
                   1'INVALID DISCIPLINE NUMBER')                              MU031220
0185                GO TO 1000                                                MU031225
0186             452  CONTINUE                                                MU031230
0187                IF(DPTNO .EQ. 0.0) GO TO 450                              MU031235
0188                IF (DPTNO .GT. 0.0) GO TO 449                             MU031240
0189                DISCDN(J,3)=0.0                                           MU031245
0190                GO TO 451                                                 MU031250
0191           449  DISCDN(J,3)=DPTNO                                         MU031255
0192                GO TO 451                                                 MU031260
0193           450  DISCDN(J,3)=DISCD(J,3)                                    MU031265
0194           451  IF (FIVE1 .EQ. 0.0) GO TO 455                             MU031270
0195                IF (FIVE1 .GT. 0.0) GO TO 454                             MU031275
0196                DISCDN(J,4)=0.0                                           MU031280
0197                GO TO 456                                                 MU031285
0198           454  DISCDN(J,4)=FIVE1                                         MU031290
0199                GO TO 456                                                 MU031295
0200           455  DISCDN(J,4)=DISCD(J,4)                                    MU031300
0201           456  IF (FIVE2 .EQ. 0.0) GO TO 460                             MU031305
0202                IF (FIVE2 .GT. 0.0) GO TO 459                             MU031310
0203                DISCDN(J,2) = 0.0                                         MU031315
0204                GO TO 461                                                 MU031320
0205           459  DISCDN(J,2) = FIVE2                                       MU031325
0206                GO TO 461                                                 MU031330
```

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0174                DEPTDN(DPTNO,13)=FIVE4                                    MU031145
0175                DEPTDN(DPTNO,14) =EGHT1                                   MU031150
0176                DEPTDN(DPTNO,15) =EGHT2                                   MU031155
0177                DEPTDN(DPTNO,17)=EGHT3                                    MU031160
0178                DEPTDN(DPTNO,18)=EGHT4                                    MU031165
0179                DEPTD2(DPTNO)=1                                           MU031170
0180                GO TO 1000                                                MU031175
                C                                                             MU031180
                C     DISCIPLINE INFO-CARD1                                   MU031185
                C                                                             MU031190
                                                                              MU031195
0181             8  J=DISNO-10.0                                             MU031200
0182                IF (J .GT. 0.0 .AND. J .LE. 8.0) GO TO 452                MU031205
0183                WRITE (3,203) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,     MU031210
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4           MU031215
0184             203 FORMAT (5X,3I2,5A4,F2.0,4F5.0,4F8.0,10X,                 MU031220
                   1'INVALID DISCIPLINE NUMBER')                              MU031225
0185                GO TO 1000                                                MU031230
0186             452 CONTINUE                                                 MU031235
0187                IF(DPTNO .EQ. 0.0) GO TO 450                              MU031240
0188                IF (DPTNO .GT. 0.0) GO TO 449                             MU031245
0189                DISCDN(J,3)=0.0                                           MU031250
0190                GO TO 451                                                 MU031255
0191             449 DISCDN(J,3)=DPTNO                                        MU031260
0192                GO TO 451                                                 MU031265
0193             450 DISCDN(J,3)=DISCD(J,3)                                   MU031270
0194             451 IF (FIVE1 .EQ. 0.0) GO TO 455                            MU031275
0195                 IF (FIVE1 .GT. 0.0) GO TO 454                            MU031280
0196                 DISCDN(J,4)=0.0                                          MU031285
0197                 GO TO 456                                                MU031290
0198             454 DISCDN(J,4)=FIVE1                                        MU031295
0199                 GO TO 456                                                MU031300
0200             455 DISCDN(J,4)=DISCD(J,4)                                   MU031305
0201             456 IF (FIVE2 .EQ. 0.0) GO TO 460                            MU031310
0202                 IF (FIVE2 .GT. 0.0) GO TO 459                            MU031315
0203                 DISCDN(J,2) = 0.0                                        MU031320
0204                 GO TO 461                                                MU031325
0205             459 DISCDN(J,2) = FIVE2                                      MU031330
0206                 GO TO 461
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              C     DISCIPLINE INFO CARD 2                                          MU031525
              C                                                                     MU031530
0244           9    J=DISNO-10.0                                                    MU031535
0245                IF (J .GT. 0.0 .AND. J .LE. 8.0) GO TO 488                      MU031540
0246                WRITE (3,203) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,           MU031545
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4                 MU031550
0247                GO TO 1000                                                      MU031555
0248          488   CONTINUE                                                        MU031560
0249          501   IF (EGHT1 .EQ. 0.0) GO TO 505                                   MU031565
0250                IF (EGHT1 .GT. 0.0) GO TO 504                                   MU031570
0251                DISCDN(J,13)=0.0                                                MU031575
0252                GO TO 506                                                       MU031580
0253          504   DISCDN(J,13)=EGHT1                                              MU031585
0254                GO TO 506                                                       MU031590
0255          505   DISCDN(J,13)=DISCD(J,13)                                        MU031595
0256          506   IF(EGHT2 .EQ. 0.0) GO TO 510                                    MU031600
0257                IF (EGHT2 .GT. 0.0) GO TO 509                                   MU031605
0258                DISCDN(J,16)=0.0                                                MU031610
0259                GO TO 511                                                       MU031615
0260          509   DISCDN(J,16)=EGHT2                                              MU031620
0261                GO TO 511                                                       MU031625
0262          510   DISCDN(J,16)=DISCD(J,16)                                        MU031630
0263          511   IF (EGHT3 .EQ. 0.0) GO TO 515                                   MU031635
0264                IF (EGHT3 .GT. 0.0) GO TO 514                                   MU031640
0265                DISCDN(J,19)=0.0                                                MU031645
0266                GO TO 516                                                       MU031650
0267          514   DISCDN(J,19)=EGHT3                                              MU031655
0268                GO TO 516                                                       MU031660
0269          515   DISCDN(J,19)=DISCD(J,19)                                        MU031665
0270          516   DISCD2(J)=1                                                     MU031670
0271                GO TO 1000                                                      MU031675
              C                                                                     MU031680
              C     DEGREE INFO                                                     MU031685
              C                                                                     MU031690
0272           11   J=DPTNO-20.0                                                    MU031695
0273                IF (J .GT. 0.0 .AND. J .LE. 8.0) GO TO 521                      MU031700
0274                WRITE (3,204) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,           MU031705
                   1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4                 MU031710
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0275          204  FORMAT (5X,3I2,5A4,F2.0,4F5.0,4F8.0,10X,                    MU031715
                  1'INVALID DEGREE NUMBER')                                    MU031720
0276               GO TO 1000                                                  MU031725
0277          521  CONTINUE                                                    MU031730
0278               IF (DESC(1) .EQ. BLANK  ) GO TO 520                         MU031735
0279               DO 517 I=1,5                                                MU031740
0280          517  DEGDSN(J,I)=DESC(I)                                         MU031745
0281               GO TO 519                                                   MU031750
0282          520  DO 518 I=1,5                                                MU031755
0283          518  DEGDSN(J,I)=DEGDS(J,I)                                      MU031760
0284          519  DEG1(J)=1                                                   MU031765
                C                                                             MU031770
                C     ICLM INFO IN FORM 2 - TYPE I COEFFICIENTS               MU031775
                C                                                             MU031780
0285                 TYPE(J,1) = FIVE1                                        MU031785
0286                 TYPE(J,2) = FIVE2                                        MU031790
0287                 TYPE(J,3) = FIVE3                                        MU031795
0288                 TYPE(J,4) = FIVE4                                        MU031800
0289                 TYPE(J,5) = EGHT1                                        MU031805
0290                 TYPE(J,6) = EGHT2                                        MU031810
0291                 TYPE(J,7) = EGHT3                                        MU031815
0292                 TYPE(J,8) = EGHT4                                        MU031820
0293                 GO TO 1000                                               MU031825
                C                                                             MU031830
                C     TOTAL WSCH / DEGREE / FTE STUDENT                       MU031835
                C                                                             MU031840
0294           12    CONTINUE                                                 MU031845
0295                 TYPE(1,9) = FIVE1                                        MU031850
0296                 TYPE(2,9) = FIVE2                                        MU031855
0297                 TYPE(3,9) = FIVE3                                        MU031860
0298                 TYPE(4,9) = FIVE4                                        MU031865
0299                 TYPE(5,9) = EGHT1                                        MU031870
0300                 TYPE(6,9) = EGHT2                                        MU031875
0301                 TYPE(7,9) = EGHT3                                        MU031880
0302                 TYPE(8,9) = EGHT4                                        MU031885
0303                 TYPE2 = 1                                                MU031890
0304                 GO TO 1000                                               MU031895
                C                                                             MU031900
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                C     ICLM MATRIX INFO                                                    MU031905
                C                                                                         MU031910
 0305            14   J=DISNO-10.0                                                       MU031915
 0306                 IF (J .GT. 0.0 .AND. J .LE. 8.0) GO TO 523                         MU031920
 0307                 WRITE (3,203) CDID, DPTNO, DISNO, DESC, CHAR2, FIVE1,              MU031925
                     1FIVE2, FIVE3, FIVE4, EGHT1, EGHT2, EGHT3, EGHT4                    MU031930
 0308                 GO TO 1000                                                         MU031935
 0309            523  CONTINUE                                                           MU031940
 0310                 IF (FIVE1 .EQ. 0.0) GO TO 525                                      MU031945
 0311                 IF (FIVE2 .GT. 0.0) GO TO 524                                      MU031950
 0312                 ICLMN(J,1)=0.0                                                     MU031955
 0313                 GO TO 526                                                          MU031960
 0314            524  ICLMN(J,1)=FIVE1                                                   MU031965
 0315                 GO TO 526                                                          MU031970
 0316            525  ICLMN(J,1)=ICLM(J,1)                                               MU031975
 0317            526  IF (FIVE2 .EQ. 0.0) GO TO 530                                      MU031980
 0318                 IF (FIVE2 .GT. 0.0) GO TO 529                                      MU031985
 0319                 ICLMN(J,2)=0.0                                                     MU031990
 0320                 GO TO 531                                                          MU031995
 0321            529  ICLMN(J,2)=FIVE2                                                   MU032000
 0322                 GO TO 531                                                          MU032005
 0323            530  ICLMN(J,2)=ICLM(J,2)                                               MU032010
 0324            531  IF (FIVE3 .EQ. 0.0) GO TO 535                                      MU032015
 0325                 IF (FIVE3 .GT. 0.0) GO TO 534                                      MU032020
 0326                 ICLMN(J,3)=0.0                                                     MU032025
 0327                 GO TO 536                                                          MU032030
 0328            534  ICLMN(J,3)=FIVE3                                                   MU032035
 0329                 GO TO 536                                                          MU032040
 0330            535  ICLMN(J,3)=ICLM(J,3)                                               MU032045
 0331            536  IF (FIVE4 .EQ. 0.0) GO TO 540                                      MU032050
 0332                 IF (FIVE4 .GT. 0.0) GO TO 539                                      MU032055
 0333                 ICLMN(J,4)=0.0                                                     MU032060
 0334                 GO TO 541                                                          MU032065
 0335            539  ICLMN(J,4)=FIVE4                                                   MU032070
 0336                 GO TO 541                                                          MU032075
 0337            540  ICLMN(J,4)=ICLM(J,4)                                               MU032080
 0338            541  IF (EGHT1 .EQ. 0.0) GO TO 545                                      MU032085
 0339                 IF (EGHT1 .GT. 0.0) GO TO 544                                      MU032090
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0340                ICLMN(J,5) = 0.0                                          MU032095
0341                GO TO 546                                                 MU032100
0342          544   ICLMN (J,5) = EGHT1                                       MU032105
0343                GO TO 546                                                 MU032110
0344          545   ICLMN(J,5) = ICLM(J,5)                                    MU032115
0345          546   IF (EGHT2 .EQ. 0.0) GO TO 550                             MU032120
0346                IF (EGHT2 .GT. 0.0) GO TO 549                             MU032125
0347                ICLMN(J,6) = 0.0                                          MU032130
0348                GO TO 551                                                 MU032135
0349          549   ICLMN(J,6) = EGHT2                                        MU032140
0350                GO TO 551                                                 MU032145
0351          550   ICLMN(J,6) = ICLM(J,6)                                    MU032150
0352          551   IF (EGHT3 .EQ. 0.0) GO TO 555                             MU032155
0353                IF (EGHT3 .GT. 0.0) GO TO 554                             MU032160
0354                ICLMN(J,7) = 0.0                                          MU032165
0355                GO TO 556                                                 MU032170
0356          554   ICLMN(J,7) = EGHT3                                        MU032175
0357                GO TO 556                                                 MU032180
0358          555   ICLMN(J,7) = ICLM(J,7)                                    MU032185
0359          556   IF (EGHT4 .EQ. 0.0) GO TO 560                             MU032190
0360                IF (EGHT4 .GT. 0.0) GO TO 559                             MU032195
0361                ICLMN(J,8) = 0.0                                          MU032200
0362                GO TO 561                                                 MU032205
0363           559  ICLMN(J,8) = EGHT4                                        MU032210
0364                GO TO 561                                                 MU032215
0365           560  ICLMN(J,8) = ICLM(J,8)                                    MU032220
0366           561  ICLM1(J) = 1                                              MU032225
0367                GO TO 1000                                                MU032230
                C                                                             MU032235
                C     STUDENT PERSISTENCE DATA                                MU032240
                C                                                             MU032245
0368            16  CONTINUE                                                  MU032250
0369                IF (FIVE1 .EQ. 0.0) GO TO 565                             MU032255
0370                IF (FIVE1 .GT. 0.0) GO TO 564                             MU032260
0371                DPIN(1) = 0.0                                             MU032265
0372                GO TO 566                                                 MU032270
0373           564  DPIN(1) = FIVE1                                           MU032275
0374                GO TO 566                                                 MU032280
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0375          565  DPIN(1) = DPI(1)                                          MU032285
0376          566  IF (FIVE2 .EQ. 0.0) GO TO 570                             MU032295
0377               IF (FIVE2 .GT. 0.0) GO TO 569                             MU032300
0378               DPIN(2) = 0.0                                             MU032305
0379               GO TO 571                                                 MU032310
0380          569  DPIN(2) = FIVE2                                           MU032315
0381               GO TO 571                                                 MU032320
0382          570  DPIN(2) = DPI(2)                                          MU032325
0383          571  IF (FIVE3 .EQ. 0.0) GO TO 575                             MU032335
0384               IF (FIVE3 .GT. 0.0) GO TO 574                             MU032340
0385               DPIN(3) = 0.0                                             MU032345
0386               GO TO 576                                                 MU032350
0387          574  DPIN(3) = FIVE3                                           MU032355
0388               GO TO 576                                                 MU032360
0389          575  DPIN(3) = DPI(3)                                          MU032365
0390          576  IF (FIVE4 .EQ. 0.0) GO TO 580                             MU032375
0391               IF (FIVE4 .GT. 0.0) GO TO 579                             MU032380
0392               DPIN(4) = 0.0                                             MU032385
0393               GO TO 581                                                 MU032390
0394          579  DPIN(4) = FIVE4                                           MU032395
0395               GO TO 581                                                 MU032400
0396          580  DPIN(4) = DPI(4)                                          MU032405
0397          581  IF (EGHT1 .EQ. 0.0) GO TO 585                             MU032415
0398               IF (EGHT1 .GT. 0.0) GO TO 584                             MU032420
0399               DPIN(5) = 0.0                                             MU032425
0400               GO TO 586                                                 MU032430
0401          584  DPIN(5) = EGHT1                                           MU032435
0402               GO TO 586                                                 MU032440
0403          585  DPIN(5) = DPI(5)                                          MU032445
0404          586  IF (EGHT2 .EQ. 0.0) GO TO 590                             MU032455
0405               IF (EGHT2 .EQ. 0.0) GO TO 589                             MU032460
0406               DPIN(6) = 0.0                                             MU032465
0407               GO TO 591                                                 MU032470
0408          589  DPIN(6) = EGHT2                                           MU032475
0409               GO TO 591                                                 MU032480
0410          590  DPIN(6) = DPI(6)                                          MU032485
0411          591  IF (EGHT3 .EQ. 0.0) GO TO 595                             MU032495
0412               IF (EGHT3 .GT. 0.0) GO TO 594                             MU032500
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0413                DPIN(7) = 0.0                                          MU032505
0414                GO TO 596                                              MU032510
0415          594   DPIN(7) = EGHT3                                        MU032515
0416                GO TO 596                                              MU032520
0417          595   DPIN(7) = DPI(7)                                       MU032525
0418          596   IF (EGHT4 .EQ. 0.0) GO TO 600                          MU032535
0419                IF (EGHT4 .GT. 0.0) GO TO 599                          MU032540
0420                DPIN(8) = 0.0                                          MU032545
0421                GO TO 601                                              MU032550
0422          599   DPIN(8) = EGHT4                                        MU032555
0423                GO TO 601                                              MU032560
0424          600   DPIN(8) = DPI(8)                                       MU032565
0425          601   DPI1 = 1                                               MU032570
0426                GO TO 1000                                             MU032575
                C                                                          MU032580
                C     ENROLLMENT INFO - CARD 1                             MU032585
                C                                                          MU032590
0427            2   CONTINUE                                               MU032600
0428                BUFFIN(1) = BUFFIN(7) + DPTNO                          MU032605
0429                IF (FIVE1 .EQ. 0.0 ) GO TO 605                         MU032610
0430                IF (FIVE1 .GT. 0.0) GO TO 604                          MU032615
0431                ENRLN(1,1) = 0.0                                       MU032620
0432                GO TO 606                                              MU032625
0433          604   ENRLN(1,1) = FIVE1                                     MU032630
0434                GO TO 606                                              MU032635
0435          605   ENRLN(1,1) = ENRL(1,1)                                 MU032640
0436          606   IF (FIVE2 .EQ. 0.0) GO TO 610                          MU032650
0437                IF (FIVE2 .GT. 0.0) GO TO 609                          MU032655
0438                ENRLN(1,2) = 0.0                                       MU032660
0439                GO TO 611                                              MU032665
0440          609   ENRLN(1,2) = FIVE2                                     MU032670
0441                GO TO 611                                              MU032675
0442          610   ENRLN(1,2) = ENRL (1,2)                                MU032680
0443          611   IF (FIVE3 .EQ. 0.0) GO TO 615                          MU032685
0444                IF (FIVE3 .GT. 0.0) GO TO 614                          MU032690
0445                ENRLN(1,3) = 0.0                                       MU032695
0446                GO TO 616                                              MU032700
0447          614   ENRLN(1,3) = FIVE3                                     MU032705
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0448              GO TO 616                                                  MU032710
0449        615   ENRLN(1,3) = ENRL (1,3)                                    MU032715
0450        616   IF (FIVE4 .EQ. 0.0) GO TO 620                              MU032725
0451              IF (FIVE4 .GT. 0.0) GO TO 619                              MU032730
0452              ENRLN(1,4) = 0.0                                           MU032735
0453               GO TO 621                                                 MU032740
0454        619   ENRLN(1,4) = FIVE4                                         MU032745
0455              GO TO 621                                                  MU032750
0456        620   ENRLN(1,4) = ENRL (1,4)                                    MU032755
0457        621   ENRL1 = 1                                                  MU032760
0458              IF (ENRLN(1,9) .NE. 0.0 .AND. EGHT1 .EQ. 0.0) GO TO 841    MU032765
0459              IF (EGHT1 .EQ. 0.0) GO TO 840                              MU032770
0460              IF (EGHT1 .GT. 0.0) GO TO 839                              MU032775
0461              ENRLN(1,9) = 0.0                                           MU032780
0462              GO TO 841                                                  MU032785
0463        839   ENRLN(1,9) = EGHT1                                         MU032790
0464              GO TO 841                                                  MU032795
0465        840   ENRLN(1,9) = ENRL(1,9)                                     MU032800
0466        841   CONTINUE                                                   MU032805
0467              GO TO 1000                                                 MU032810
            C                                                                MU032815
            C     ENROLLMENT DATA - CARD 2                                   MU032820
            C                                                                MU032825
0468          3   CONTINUE                                                   MU032830
0469              BUFF1N(1) = BUFF1N(7) + DPTNO                              MU032835
0470              IF (FIVE1 .EQ. 0.0) GO TO 625                              MU032840
0471              IF (FIVE1 .GT. 0.0) GO TO 624                              MU032845
0472              ENRLN(1,5) = 0.0                                           MU032850
0473              GO TO 626                                                  MU032855
0474        624   ENRLN(1,5) = FIVE1                                         MU032860
0475              GO TO 626                                                  MU032865
0476        625   ENRLN(1,5) = ENRL(1,5)                                     MU032870
0477        626   IF (FIVE2 .EQ. 0.0) GO TO 630                              MU032875
0478              IF (FIVE2 .GT. 0.0) GO TO 629                              MU032880
0479              ENRLN(1,6) = 0.0                                           MU032885
0480              GO TO 631                                                  MU032890
0481        629   ENRLN(1,6) = FIVE2                                         MU032895
0482              GO TO 631                                                  MU032900
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0483          630  ENRLN(1,6) = ENRL(1,6)                                                MU032905
0484          631  IF (FIVE3 .EQ. 0.0) GO TO 635                                         MU032915
0485               IF (FIVE3 .GT. 0.0) GO TO 634                                         MU032920
0486               ENRLN(1,7) = 0.0                                                      MU032925
0487               GO TO 636                                                             MU032930
0488          634  ENRLN(1,7) = FIVE3                                                    MU032935
0489               GO TO 636                                                             MU032940
0490          635  ENRLN(1,7) = ENRL(1,7)                                                MU032945
0491          636  IF (FIVE4 .EQ. 0.0) GO TO 640                                         MU032955
0492               IF (FIVE4 .GT. 0.0) GO TO 639                                         MU032960
0493               ENRLN(1,8) = 0.0                                                      MU032965
0494               GO TO 641                                                             MU032970
0495          639  ENRLN(1,8) = FIVE4                                                    MU032975
0496               GO TO 641                                                             MU032980
0497          640  ENRLN(1,8) = ENRL(1,8)                                                MU032985
0498          641  CONTINUE                                                              MU032995
0499               IF (ENRLN(1,9) .NE. 0.0 .AND. EGHT1 .EQ. 0.0) GO TO 646               MU033000
0500               IF (EGHT1 .EQ. 0.0) GO TO 645                                         MU033005
0501               IF (EGHT1 .GT. 0.0) GO TO 644                                         MU033010
0502               ENRLN(1,9) = 0.0                                                      MU033015
0503               GO TO 646                                                             MU033020
0504           644 ENRLN(1,9) = EGHT1                                                    MU033025
0505               GO TO 646                                                             MU033030
0506           645 ENRLN(1,9) = ENRL(1,9)                                                MU033035
0507           646 CONTINUE                                                              MU033045
0508               ENRL2 = 1                                                             MU033050
0509               GO TO 1000                                                            MU033055
                C                                                                        MU033065
                C     CHECK TO SEE WHICH CARDS WERE READ                                 MU033070
                C                                                                        MU033075
0510           2000 CONTINUE                                                            MU033080
0511               IF (COLLD1 .EQ. 1 ) GO TO 700                                         MU033085
0512               COLLDN(2) = COLLD(2)                                                  MU033090
0513               COLLDN(3) = COLLD(3)                                                  MU033095
0514               COLLDN(5) = COLLD(5)                                                  MU033100
0515               COLLDN(6) = COLLD(6)                                                  MU033105
0516           700 CONTINUE                                                              MU033115
0517               IF (COLLD2 .EQ. 1) GO TO 705                                          MU033120
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0518              COLLDN(8) = COLLD(8)                                    MU033125
0519              COLLDN(9) = COLLD(9)                                    MU033130
0520          705 CONTINUE                                                MU033140
0521              DO 710 I = 1,8                                          MU033145
0522              IF (DEPTD1(I) .EQ. 1) GO TO 710                         MU033150
0523              DEPTDN(I,1) = DEPTD(I,1)                                MU033155
0524              DEPTDN(I,3) = DEPTD(I,3)                                MU033160
0525              DEPTDN(I,4) = DEPTD(I,4)                                MU033165
0526              DEPTDN(I,5) = DEPTD(I,5)                                MU033170
0527              DEPTDN(I,6) = DEPTD(I,6)                                MU033175
0528              DEPTDN(I,7) = DEPTD(I,7)                                MU033180
0529              DEPTDN(I,8) = DEPTD(I,8)                                MU033185
0530              DEPTDN(I,9) = DEPTD(I,9)                                MU033190
0531              DEPTDN(I,11) = DEPTD(I,11)                              MU033195
0532              DEPTDN(I,22) = DEPTD(I,22)                              MU033200
0533              DO 710 J = 1,5                                          MU033205
0534              DPTDSN(I,J) = DPTDS(I,J)                                MU033210
0535          710 CONTINUE                                                MU033215
0536              DO 715 I = 1,8                                          MU033225
0537              IF (DEPTD2(I) .EQ. 1) GO TO 715                         MU033230
0538              DEPTDN(I,13) = DEPTD(I,13)                              MU033235
0539              DEPTDN(I,14) = DEPTD(I,14)                              MU033240
0540              DEPTDN(I,15) = DEPTD(I,15)                              MU033245
0541              DEPTDN(I,17) = DEPTD(I,17)                              MU033250
0542              DEPTDN(I,18) = DEPTD(I,18)                              MU033255
0543          715 CONTINUE                                                MU033260
0544              DO 720 I = 1,8                                          MU033270
0545              IF (DISCD1(I) .EQ. 1) GO TO 720                         MU033275
0546              DISCDN(I,1) = DISCD(I,1)                                MU033280
0547              DISCDN(I,2) = DISCD(I,2)                                MU033285
0548              DISCDN(I,3) = DISCD(I,3)                                MU033290
0549              DISCDN(I,4) = DISCD(I,4)                                MU033295
0550              DISCDN(I,5) = DISCD(I,5)                                MU033300
0551              DISCDN(I,11) = DISCD(I,11)                              MU033305
0552              DISCDN(I,14) = DISCD(I,14)                              MU033310
0553              DISCDN(I,17) = DISCD(I,17)                              MU033315
0554              DO 720 J = 1,5                                          MU033320
0555              DISDSN(I,J) = DISDS(I,J)                                MU033325
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0556          720  CONTINUE                                                    MU033330
0557               DO 725 I = 1,8                                              MU033335
0558               IF (DISCD2(I) .EQ. 1) GO TO 725                             MU033340
0559               DISCDN(I,13) = DISCD(I,13)                                  MU033345
0560               DISCDN(I,16) = DISCD(I,16)                                  MU033350
0561               DISCDN(I,19) = DISCD(I,19)                                  MU033355
0562          725  CONTINUE                                                    MU033360
0563               DO 730 I = 1,8                                              MU033370
0564               IF (DEG1(I) .EQ. 1) GO TO 730                               MU033375
0565               DO 730 J = 1,5                                              MU033380
0566               DEGDSN(I,J) = DEGDS(I,J)                                    MU033385
0567          730  CONTINUE                                                    MU033390
0568               DO 735 I = 1,8                                              MU033395
0569               IF (ICLM1(I) .EQ. 1) GO TO 735                              MU033400
0570               DO 735 J = 1,8                                              MU033405
0571               ICLMN(I,J) = ICLM(I,J)                                      MU033410
0572          735  CONTINUE                                                    MU033415
0573               IF (DPI1 .EQ. 1) GO TO 740                                  MU033425
0574               DO 740 I = 1,8                                              MU033430
0575               DPIN(I) = DPI(I)                                            MU033435
0576          740  CONTINUE                                                    MU033440
0577               IF (ENRL1 .EQ. 1) GO TO 745                                 MU033450
0578               DO 745 I = 1,4                                              MU033455
0579               ENRLN(1,I) = ENRL(1,I)                                      MU033460
0580          745  CONTINUE                                                    MU033465
0581               IF (ENRL2 .EQ. 1) GO TO 750                                 MU033475
0582               ENRLN(1,5) = ENRL(1,5)                                      MU033480
0583               ENRLN(1,6) = ENRL(1,6)                                      MU033485
0584               ENRLN(1,7) = ENRL(1,7)                                      MU033490
0585               ENRLN(1,8) = ENRL(1,8)                                      MU033495
0586          750  CONTINUE                                                    MU033500
0587               IF (ENRLN(1,9) .EQ. 0.0) ENRLN(1,9) = ENRL(1,9)             MU033505
                C                                                             MU033510
                C     CREATE ICLM FROM TYPE 11 AND TYPE 12 CARDS              MU033515
                C     INSTEAD OF TYPE 14 CARDS                                MU033520
                C                                                             MU033525
0588               IF (TYPE2 .NE. 1) GO TO 825                                 MU033530
0589               DO 815 I = 1,8                                              MU033535
```

```
      DO 815 J = 1,8                                                    MU033540
  815 TYPE(I,J) = TYPE(I,J) * TYPE(I,9)                                 MU033545
      DO 825 I = 1,8                                                    MU033550
      DO 825 J = 1,8                                                    MU033555
      IF (TYPE(I,J) .EQ. 0.0) GO TO 820                                 MU033560
      IF (TYPE(I,J) .GT. 0.0) GO TO 819                                 MU033565
      ICLMN(J,I) = 0.0                                                  MU033570
      GO TO 821                                                         MU033575
  819 ICLMN(J,I) = TYPE(I,J)                                            MU033580
      GO TO 821                                                         MU033585
  820 ICLMN(J,I) = ICLM(J,I)                                            MU033590
  821 CONTINUE                                                          MU033595
  825 CONTINUE                                                          MU033600
C                                                                       MU033610
C     MOVE NEW COMMON TO OLD CCMMON                                     MU033615
C                                                                       MU033620
      DO 4100 I=1,8                                                     MU033625
      DO 4111 J=1,8                                                     MU033630
 4111 PCCM(I,J) = PCCMN(I,J)                                            MU033635
      DO 4112  J=1,10                                                   MU033640
      ICLM(I,J) = ICLMN(I,J)                                            MU033645
      IWLM(I,J) = IWLMN(I,J)                                            MU033650
 4112 CONTINUE                                                          MU033655
      DO 4113 J=1,12                                                    MU033660
 4113 DEGRD(I,J) = DEGRDN(I,J)                                          MU033665
      DO 4114 J = 1,24                                                  MU033670
      DISCD(I,J) = DISCDN(I,J)                                          MU033675
      DEPTD(I,J) = DEPTDN(I,J)                                          MU033680
 4114 CONTINUE                                                          MU033685
      DO 4115 J = 1,5                                                   MU033690
      DPTDS(I,J) = DPTDSN(I,J)                                          MU033695
      DISDS(I,J) = DISDSN(I,J)                                          MU033700
      DEGDS(I,J) = DEGDSN(I,J)                                          MU033705
 4115 CONTINUE                                                          MU033710
 4100 CONTINUE                                                          MU033715
      DO 4116 I=1,12                                                    MU033720
 4116 COLLD(I) = COLLDN(I)                                              MU033725
      DO 4117 I=1,8                                                     MU033730
```

```
0625          4117 DPI(I) = DPIN(I)                                          MU033735
0626               DO 4118 I=1,5                                             MU033740
0627               DO 4118 J=1,9                                             MU033745
0628          4118 ENRL(I,J) = ENRLN(I,J)                                    MU033750
0629               DO 4119 I=1,71                                            MU033755
0630          4119 BUFF1(I) = BUFF1N(I)                                      MU033760
0631               RETURN                                                    MU033765
0632               END                                                       MU033770
```

COMMON BLOCK / / MAP SIZE 1E00

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD	0	PCCM	30	ENRL	130	ICLM	1E4	DPI	324
IWLM	344	BUFF1	484	DEGRD	5A0	DISCD	720	DEPTD	A20
DPTDS	D20	DISDS	DC0	DEGDS	E60	COLLDN	F00	PCCMN	F30
ENRLN	1030	ICLMN	10E4	DPIN	1224	IWLMN	1244	BUFFIN	1384
DEGRDN	14A0	DISCDN	1620	DEPTDN	1920	DPTDSN	1C20	DISDSN	1CC0
DEGDSN	1D60								

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
BLANK	8E0	I	8E4	J	8E8	ENRL1	8EC	ENRL2	8F0
SPERS1	8F4	CDID	8F8	DPTNO	8FC	DISNO	900	CHAR2	904
FIVE1	908	FIVE2	90C	FIVE3	910	FIVE4	914	EGHT1	918
EGHT2	91C	EGHT3	920	EGHT4	924	DPI1	928	TYPE1	92A
TYPE2	92C	COLLD1	92E	COLLD2	930				

ARRAY MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
DESC	934	AREA1	948	AREA2	968	TYPE	988	DEPTD1	AA8
DEPTD2	AB8	DISCD1	AC8	DISCD2	AD8	DEG1	AE8	ICLM1	AF8

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	B08								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
201	B0C	300	B23	202	B59	203	B8F	204	BC5

TOTAL MEMORY REQUIREMENTS 0037EA BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

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APPENDIX D 4

PROGRAM LISTING, UPDATE, CALC

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0001          SUBROUTINE CALC                                                  MU040005
        C                                                                      MU040010
        C     CALCULATE THE VALUES REQUIRED IN MATRICES                        MU040015
        C                                                                      MU040020
        C                                                                      MU040025
        C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F   MU040030
        C     UNDER DOS LEVEL 19.                                              MU040035
        C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                  MU040040
        C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.    MU040045
        C     FOR OPERATING INSTRUCTIONS SEE -                                 MU040050
        C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL         MU040055
        C                           INSTITUTION, USERS MANUAL                  MU040060
        C          BY COLBY H. SPRINGER, MARCH 1970                            MU040065
        C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION  MU040070
        C          BOULDER, COLORADO  80302                                    MU040075
        C                                                                      MU040080
        C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                 MU040085
        C          NR OEC-0-8-980708-4533(010)                                 MU040090
        C                                                                      MU040095
        C                                                                      MU040100
0002          COMMON COLLD(12), PCCM(8,8), ENRL(5,9),                          MU040105
             1ICLM(8,10), DPI(8),   IWLM(8,10), BUFF1(71),                     MU040110
             2DEGRD(8,12), DISCD(8,24), DEPTD(8,24),                           MU040115
             3DPTDS(8,5),        DISDS(8,5),DEGDS(8,5)                         MU040120
0003          COMMON COLLDN(12), PCCMN(8,8),ENRLN(5,9),ICLMN(8,10),DPIN(8),    MU040125
             1IWLMN(8,10),BUFF1N(71),DEGRDN(8,12),DISCDN(8,24),DEPTDN(8,24),   MU040130
             2DPTDSN(8,5),DISDSN(8,5),DEGDSN(8,5)                              MU040135
0004          REAL DPTDS, DIDDS, DEGDS, DESC,ICLM,IWLM                         MU040140
0005          INTEGER ICLMN,IWLMN                                              MU040145
        C                                                                      MU040150
        C     SET UP VALUES IN IWLM                                            MU040155
        C                                                                      MU040160
0006          DO 3000 I = 1,8                                                  MU040165
0007          DO 3000 J = 1,8                                                  MU040170
0008          IWLM(J,I) = ENRL(1,I) * ENRL(1,9) * ICLM(J,I)                    MU040175
0009       3000 CONTINUE                                                       MU040180
        C                                                                      MU040190
        C     CREATE TOTAL AND PERCENTAGE COLUMNS OF IWLM                      MU040195
```

```
                C
0010                  DO 3005 I = 1,8                                                    MU040200
0011                  DO 3005 J = 1,8                                                    MU040205
0012             3005 IWLM(I,9) = IWLM(I,9) + IWLM(I,J)                                  MU040210
0013                  DO 3010 I = 1,8                                                    MU040215
0014                  TOTAL = 0.0                                                        MU040220
0015                  DO 3006 J = 1,8                                                    MU040225
0016             3006 IF (DISCD(J,3) .EQ. DEPTD(I,1)) TOTAL = TOTAL + IWLM(J,9)          MU040230
0017                  DO 3009 J = 1,8                                                    MU040235
0018                  IF (DISCD(J,3) .NE. DEPTD(I,1)) GO TO 3009                         MU040240
0019                    IF (TOTAL .NE. 0.0) GO TO 3007                                   MU040245
0020                  IWLM(J,10) = 0.0                                                   MU040250
0021                  GO TO 3009                                                         MU040255
0022             3007 IWLM(J,10) = IWLM(J,9) / TOTAL                                     MU040260
0023             3009 CONTINUE                                                           MU040265
0024             3010 CONTINUE                                                           MU040270
                C                                                                       MU040275
                C     CREATE ACTUAL WSCH / SECTION                                      MU040280
                C                                                                       MU040285
                      DO 3012 I = 1,8                                                   MU040290
0025                                                                                    MU040295
0026             3012 DISCD(I,1) = DISCD(I,2) * DISCD(I,4)                              MU040300
                C                                                                       MU040305
                C     CREATE PROGRAM CONTRIBUTION MATRIX                                MU040315
                C                                                                       MU040320
                      DO 3015 I = 1,8                                                   MU040325
0027                  DO 3015 J = 1,8                                                   MU040330
0028                  IF (IWLM(I,9) .NE. 0.0) GO TO 3014                                MU040335
0029                  PCCM(I,J) = 0.0                                                   MU040340
0030                  GO TO 3015                                                        MU040345
0031             3014 PCCM(I,J) = IWLM(I,J) / IWLM(I,9)                                 MU040350
0032             3015 CONTINUE                                                          MU040355
0033                                                                                    MU040365
                C                                                                       MU040370
                C     CALCULATE NUMBER OF CLASS SECTIONS BY DISCIPLINE                  MU040375
                C                                                                       MU040380
                      DO 3020 I = 1,8                                                   MU040385
0034                  IF (DISCD(I,1) .NE. 0.0) GO TO 3017                               MU040390
0035                  ICLM(I,9) = 0.0                                                   MU040395
0036                  GO TO 3018
0037
```

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0038          3017 ICLM(I,9) = IWLM(I,9) / DISCD(I,1)                          MU040400
0039          3018 CONTINUE                                                    MU040405
                  C                                                           MU040415
                  C     ROUND ROUND THE COURSE SECTIONS                       MU040420
                  C                                                           MU040425
0040                   J = ICLM(I,9) + .3                                     MU040435
0041                   ICLM(I,10) = J                                         MU040440
0042          3020 CONTINUE                                                    MU040445
                  C                                                           MU040455
                  C     CALCULATE NUMBER OF FACULTY REQUIRED                  MU040460
                  C                                                           MU040465
0043                   DO 3040 I = 1,8                                        MU040470
0044                   IF ((DISCD(I,5) * DISCD(I,4)) .NE. 0.0) GO TO 3024     MU040475
0045                   TOTAL = 0.0                                            MU040480
0046                   GO TO 3025                                             MU040485
0047          3024 TOTAL = IWLM(I,9) / (DISCD(I,5) * DISCD(I,4))             MU040490
0048          3025 CONTINUE                                                    MU040495
0049                   J = TOTAL + .5                                         MU040500
0050                   TOTAL = J                                              MU040505
0051                   PER1 = DISCD(I,11) * TOTAL                             MU040510
0052                   PER2 = DISCD(I,14) * TOTAL                             MU040515
0053                   PER3 = DISCD(I,17) * TOTAL                             MU040520
0054                   TOT = 0.0                                              MU040525
0055                   J = PER1                                               MU040530
0056                   PER1 = PER1 - J                                        MU040535
0057                   DISCD(I,12) = J                                        MU040540
0058                   TOT = TOT + J                                          MU040545
0059                   J = PER2                                               MU040550
0060                   PER2 = PER2 - J                                        MU040555
0061                   DISCD(I,15) = J                                        MU040560
0062                   TOT = TOT + J                                          MU040565
0063                   J = PER3                                               MU040570
0064                   PER3 = PER3 - J                                        MU040575
0065                   DISCD(I,18) = J                                        MU040580
0066                   TOT = TOT + J                                          MU040585
                  C                                                           MU040590
                  C     TEST TO SEE IF ENOUGH FACULTY                         MU040595
                  C                                                           MU040600
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0067          3030 IF (TOT .EQ. TOTAL ) GO TO 3040                                    MU040605
0068               IF (PER1 .LT. PER2 .OR. PER1 .LT. PER3) GO TO 3033                 MU040610
0069               DISCD(I,12) = DISCD(I,12) + 1.0                                    MU040615
0070               TOT = TOT + 1.0                                                    MU040620
0071               PER1 = 0.0                                                         MU040625
0072               GO TO 3030                                                         MU040630
0073          3033 IF (PER2 .LT. PER3) GO TO 3035                                     MU040635
0074               DISCD(I,15) = DISCD(I,15) + 1                                      MU040640
0075               TOT = TOT + 1.0                                                    MU040645
0076               PER2 = 0.0                                                         MU040650
0077               GO TO 3030                                                         MU040655
0078          3035 DISCD(I,18) = DISCD(I,18) + 1.0                                    MU040660
0079               TOT = TOT + 1.0                                                    MU040665
0080               PER3 = 0.0                                                         MU040670
0081               GO TO 3030                                                         MU040675
0082          3040 CONTINUE                                                           MU040680
                C                                                                     MU040690
                C     CALCULATE NUMBER OF FTE FACULTY / DEPT                          MU040695
                C                                                                     MU040700
0083               DO 3045 I = 1,8                                                    MU040705
0084               DO 3045 J = 1,8                                                    MU040710
0085               IF (DEPTD(I,1) .NE. DISCD(J,3)) GO TO 3045                         MU040715
0086               DO 3045 K = 12,18,3                                                MU040720
0087               DEPTD(I,21) = DEPTD(I,21) + DISCD(J,K)                             MU040725
0088          3045 CONTINUE                                                           MU040730
                C                                                                     MU040740
                C     CALCULATE THE NUMBER OF FTE SECRETARIES                         MU040745
                C                                                                     MU040750
0089               DO 3050 I = 1,8                                                    MU040755
0090               TOTAL = DEPTD(I,21) * DEPTD(I,8) + DEPTD(I,6) * DEPTD(I,22)        MU040760
0091               J = TOTAL + .5                                                     MU040765
0092               DEPTD(I,10) = J                                                    MU040770
0093          3050 CONTINUE                                                           MU040775
                C                                                                     MU040785
                C     CALCULATE OFFICE SUPPLIES EXPENSE                               MU040790
                C                                                                     MU040795
0094               DO 3055 I = 1,8                                                    MU040800
0095          3055 DEPTD(I,12) = (DEPTD(I,6) + DEPTD(I,21)) * DEPTD(I,13) +           MU040805
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                     1     DEPTD(I,13) * DEPTD(I,14) + DEPTD(I,15)                                    MU040810
                C                                                                                     MU040820
                C     CALCULATE INSTRUCTIONAL SUPPLIES EXPENSE                                        MU040825
                C                                                                                     MU040830
0096                  DO 3060 I = 1,8                                                                 MU040835
0097                  TOTAL = 0.0                                                                     MU040840
0098                  DO 3058 J = 1,8                                                                 MU040845
0099           3058   IF (DISCD(J,3) .EQ. DEPTD(I,1)) TOTAL = TOTAL + IWLM(J,9)                       MU040850
0100           3060   DEPTD(I,16) = TOTAL      * DEPTD(I,17) + DEPTD(I,18)                            MU040855
                C                                                                                     MU040865
                C     CALCULATE TOTAL COST FOR FACULTY                                                MU040870
                C                                                                                     MU040875
0101                  DO 3065 I = 1,8                                                                 MU040880
0102                  DEPTD(I,19) = DEPTD(I,6) * DEPTD(I,7)                                           MU040885
0103                  DO 3065 K = 1,8                                                                 MU040890
0104                  IF (DISCD(K,3) .NE. DEPTD(I,1)) GO TO 3065                                      MU040895
0105                  DO 3065 J = 12,18,3                                                             MU040900
0106                  DEPTD(I,19) = DEPTD(I,19) + DISCD(K,J) * DISCD(K,J+1)                           MU040905
0107           3065   CONTINUE                                                                        MU040910
                C                                                                                     MU040920
                C     CALCULATE TOTAL DEPARTMENT BUDGET                                               MU040925
                C                                                                                     MU040930
0108                  DO 3070 I = 1,8                                                                 MU040935
0109           3070   DEPTD(I,20) = DEPTD(I,20) + DEPTD(I,4) * DEPTD(I,5) +                           MU040940
                     1     DEPTD(I,9) * DEPTD(I,10) + DEPTD(I,11) *                                   MU040945
                     2     (DEPTD(I,21) + DEPTD(I,6)) + DEPTD(I,12) + DEPTD(I,16) +                   MU040950
                     3     DEPTD(I,19)                                                                MU040955
                C                                                                                     MU040965
                C     CALCULATE LIBRARY COSTS                                                         MU040970
                C                                                                                     MU040975
0110                  TOTAL = 0.0                                                                     MU040980
0111                  DO 3080 I = 1,8                                                                 MU040985
0112           3080   TOTAL = TOTAL + DEPTD(I,3)                                                      MU040990
0113                  COLLD(1) = COLLD(2) * TOTAL + COLLD(3)                                          MU040995
                C                                                                                     MU041005
                C     CALCULATE CENTRAL ADMINISTRATION COSTS                                          MU041010
                C                                                                                     MU041015
0114                  DO 3085 I = 1,8                                                                 MU041020
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0115          3085 COLLD(4) = COLLD(4) + COLLD(5) * (DEPTD(I,21) + DEPTD(I,6))        MU041025
0116               COLLD(4) = COLLD(4) + COLLD(6)                                     MU041030
                   C                                                                  MU041040
                   C     CALCULATE PHYSICAL PLANT COSTS                               MU041045
                   C                                                                  MU041050
0117               TOTAL1 = 0.0                                                       MU041055
0118               DO 3090 I = 1,8                                                    MU041060
0119          3090 TOTAL1 = TOTAL1 + ICLM(I,10)                                       MU041065
0120               COLLD(7) = COLLD(8) * TOTAL1 + COLLD(9)                            MU041070
                   C                                                                  MU041075
                   C     CALCULATE AREA COSTS BY DISCIPLINE                           MU041080
                   C                                                                  MU041085
0121               TOTAL1 = 0.0                                                       MU041090
0122               DO 3093 I = 1,8                                                    MU041095
0123               DO 3093 J=12,18,3                                                  MU041100
0124               TOTAL1 = TOTAL1 + DISCD(I,J)                                       MU041105
0125          3093 CONTINUE                                                           MU041110
0126               TOTS = 0.0                                                         MU041115
0127               DO 3094 I=1,8                                                      MU041120
0128          3094  TOTS = TOTS + ICLM(I,10)                                         MU041125
                   C                                                                  MU041130
                   C     CALCULATE DEPARTMENT COSTS                                   MU041135
                   C                                                                  MU041140
0129               DO 3095 I=1,8                                                      MU041145
0130               IF (DISCD(I,3) .GT. 0.0 .AND. DISCD(I,3) .LE. 8.0)  GO TO 4000     MU041150
0131               DISCD(I,6) = 0.0                                                   MU041155
0132               GO TO 4001                                                         MU041160
0133          4000 DISCD(I,6) = DEPTD(DISCD(I,3),20) * IWLM(I,10)                     MU041165
0134          4001 CONTINUE                                                           MU041170
                   C                                                                  MU041175
                   C     CALCULATE LIBRARY COSTS                                      MU041180
                   C                                                                  MU041185
0135               IF (TOTAL .NE. 0.0) GO TO 3120                                     MU041190
0136               DISCD(I,7) = 0.0                                                   MU041195
0137               GO TO 3121                                                         MU041200
0138          3120 IF (DISCD(I,3) .NE. 0.0) DISCD(I,7) = COLLD(1) / TOTAL             MU041205
0139          3121 CONTINUE                                                           MU041210
                   C                                                                  MU041215
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                C     CALCULATE PHYSICAL PLANT COSTS                                    MU041220
                C                                                                       MU041225
0140                  IF (TOTS .NE. 0.0) GO TO 3124                                     MU041230
0141                  DISCD(I,8) = 0.0                                                  MU041235
0142                  GO TO 3125                                                        MU041240
0143            3124  DISCD(I,8) = COLLD(7) * ICLM(I,10) / TOTS                         MU041245
0144            3125  CONTINUE                                                          MU041250
                C                                                                       MU041255
                C     CALCULATE CENTRAL ADMINISTRATION COSRS                            MU041260
                C                                                                       MU041265
0145                  TOT = 0.0                                                         MU041270
0146                  DO 3096 J = 12,18,3                                               MU041275
0147            3096  TOT = TOT +DISCD(I,J)                                             MU041280
0148                  IF (TOTAL1 .NE. 0.0) GO TO 3129                                   MU041285
0149                  DISCD(I,9) = 0.0                                                  MU041290
0150                  GO TO 3130                                                        MU041295
0151            3129  DISCD(I,9) = COLLD(4) * TOT / TOTAL1                              MU041300
0152            3130  CONTINUE                                                          MU041305
                C                                                                       MU041310
                C     CALCULATE TOTAL COSTS PER DISCIPLINE                              MU041315
                C                                                                       MU041320
0153                  DISCD(I,10) = DISCD(I,6) + DISCD(I,7) + DISCD(I,8) + DISCD(I,9)   MU041325
0154            3095   CONTINUE                                                         MU041330
                C                                                                       MU041335
                C     CALCULATE COST / WSCH TAUGHT                                      MU041340
                C                                                                       MU041345
0155                  DO 3100 I = 1,8                                                   MU041350
0156                  IF (IWLM(I,9) .NE. 0.0) GO TO 3134                                MU041355
0157                  DISCD(I,20) = 0.0                                                 MU041360
0158                  GO TO 3100                                                        MU041365
0159            3134  DISCD(I,20) = DISCD(I,10) / IWLM(I,9)                             MU041370
0160            3100  CONTINUE                                                          MU041375
                C                                                                       MU041380
                C     CALCULATE DEGREE COSTS                                            MU041385
                C                                                                       MU041390
                C     J - DISCIPLINE INDEX, I - DEGREE INDEX                            MU041395
0161                  DO 3110 J = 1,8                                                   MU041400
0162                  DO 3105 I = 1,8                                                   MU041405
```


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                C
                C     CALCULATE DEPARTMENT COSTS
                C
0163                  DEGRD(J,4) = DEGRD(J,4) + (PCCM(I,J) * DISCD(I,6))
                C
                C     CALCULATE CENTRAL ADMINISTRATION COSTS
                C
0164                  DEGRD(J,5) = DEGRD(J,5) + (PCCM(I,J) * DISCD(I,9))
                C
                C     CALCULATE PHYSICAL PLANT COSTS
                C
0165                  DEGRD(J,6) = DEGRD(J,6) + (PCCM(I,J) * DISCD(I,8))
                C
                C     CALCULATE LIBRARY COSTS
                C
0166                  DEGRD(J,7) = DEGRD(J,7) + (PCCM(I,J) * DISCD(I,7))
0167             3105 CONTINUE
                C
                C     CALCULATE TOTAL COSTS
                C
0168                  DEGRD(J,3) = DEGRD(J,4) + DEGRD(J,5) + DEGRD(J,6) + DEGRD(J,7)
0169             3110 CONTINUE
                C
                C     CALCULATE ENROLLMENT / DEGREE
                C
0170                  DO 3115 I=1,8
0171             3115 DEGRD(I,8) = ENRL(1,I) * ENRL(1,9)
                C
                C
0172                  RETURN
0173                  END
```

COMMON BLOCK / / MAP SIZE 1E00

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD	0	PCCM	30	ENRL	130	ICLM	1E4	DPI	324
IWLM	344	BUFF1	484	DEGRD	5A0	DISCD	720	DEPTD	A20
DPTDS	D20	DISDS	DC0	DEGDS	E60	COLLDN	F00	PCCMN	F30
ENRLN	1030	ICLMN	10E4	DPIN	1224	IWLMN	1244	BUFFIN	1384
DEGRDN	14A0	DISCDN	1620	DEPTDN	1920	DPTDSN	1C20	DISDSN	1CC0
DEGDSN	1D60								

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
I	22C	J	230	TOTAL	234	PER1	238	PER2	23C
PER3	240	TOT	244	K	248	TOTAL1	24C	TOTS	250

TOTAL MEMORY REQUIREMENTS 000F60 BYTES.

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 5

PROGRAM LISTING, REPORTS, MAINPGM

113

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                C                                                                   MU050005
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F  MU050010
                C     UNDER DOS LEVEL 19.                                            MU050015
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                MU050020
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.  MU050025
                C     FOR OPERATING INSTRUCTIONS SEE -                               MU050030
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL       MU050035
                C                          INSTITUTION, USERS MANUAL                 MU050040
                C          BY COLBY H. SPRINGER, MARCH 1970                          MU050045
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION MU050050
                C          BOULDER, COLORADO  80302                                  MU050055
                C                                                                   MU050060
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT               MU050065
                C          NR OEC-0-8-980708-4533(010)                               MU050070
                C                                                                   MU050075
                C                                                                   MU050080
0001                COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU050085
                   1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU050090
                   2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                          MU050095
0002                COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU050100
                   1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU050105
                   2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                          MU050110
0003                COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU050115
                   1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU050120
                   2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                          MU050125
0004                COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU050130
                   1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU050135
                   2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                          MU050140
0005                COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU050145
                   1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU050150
                   2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                          MU050155
0006                COMMON J1, J2, J3, J4, J5, YY, MM, DD                           MU050160
0007                REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU050165
0008                REAL MM                                                         MU050170
                C                                                                   MU050175
                C     PROGRAM FOR OUTPUT REPORTS FOR MICRO-U                         MU050180
                C     PROGRAMMER - CAROL J. KANTOR                                   MU050185
                C     USES TAPE CREATED BY PROGRAM MICROU PROGRAMMER- COLBY SPRINGER.  MU050190
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                C                                                                       MU050195
                C     MAIN PROGRAM WILL READ IN 5 YEARS OF DATA INTO COMMON AND CALL THEMU05020C
                C     ROUTINES FOR MICRO-U                                              MU050205
                C     COMMON  FOR 5 BLOCKS OF MICRO-U DATA CORRESPONDING TO THE 5 YEARS.MU050210
                C     COMMON FOR J1 - J5 CORRESPONDING TO YEARS TO BE USED.             MU050215
                C                                                                       MU050220
                C     KIF IS THE FLAG FOR MOVING THE DISCRIPTION DATA TO THE 5TH BLOCK OMU050225
                C      THERE ARE LESS THAN 5 YEARS TO BE HANDLED.                       MU050230
                C                                                                       MU050235
0009                  KIF=0                                                             MU050240
0010                  REWIND 6                                                          MU050245
                C                                                                       MU050250
                C     READ CONTROL CARD WITH REPORT DATE AND NUMBER OF COPIES           MU050255
                C                                                                       MU050260
0011                  READ (1,1001) YY,MM,DD,N                                          MU050265
0012             1001 FORMAT (9X,3A2,1X,I4)                                             MU050270
0013                  IF (N .LE. 0 ) N = 1                                              MU050275
                C     READ FROM TAPE THE FIRST YEAR DATA ARRAY LENGTH FROM COMMON, IF EOMU050280
                C     ENCOUNTERED AN ERROR MESSAGE WILL BE PRINTED.                     MU050285
0014                1 READ(6,END=11) COLLD1,                                          MU050290
                     1                PCCM1,ENRL1,ICLM1,DPI1,  IWLM1,BUFF11,DEGRD1,DISCD1MU050295
                     1,DEPTD1,DEPDS1,DISDS1,DEGDS1                                     MU050300
0015                  KNUM = 1                                                          MU050305
                C     READ FROM THE TAPE THE SECOND THROUGH FIFTH YEARS OF DATA IF NO DAMU050310
                C     Y OF THE YEARS IS FOUND THE BLOCK WILL BE ZEROED OUT BY SUBROUTINEMU050315
                C                                                                       MU050320
0016                2 READ(6,END=100)                                                 MU050325
                     1        COLLD2,PCCM2,ENRL2,ICLM2,DPI2,  IWLM2,BUFF12,DEGRD2,DISCD2MU050330
                     1,DEPTD2,DEPDS2,DISDS2,DEGDS2                                     MU050335
0017                  KNUM = 2                                                          MU050340
0018                3 READ(6,END=200)                                                 MU050345
                     1        COLLD3,PCCM3,ENRL3,ICLM3,DPI3,  IWLM3,BUFF13,DEGRD3,DISCD3MU050350
                     2,DEPTD3,DEPDS3,DISDS3,DEGDS3                                     MU050355
0019                  KNUM = 3                                                          MU050360
0020                5 READ(6,END=300)                                                 MU050365
                     1        COLLD4,PCCM4,ENRL4,ICLM4,DPI4,  IWLM4,BUFF14,DEGRD4,DISCD4MU050370
                     3,DEPTD4,DEPDS4,DISDS4,DEGDS4                                     MU050375
0021                  KNUM = 4                                                          MU050380
```

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0022          4 READ(6,END=400)                                                  MU050385
               1        COLLD5,PCCM5,ENRL5,ICLM5,DPI5,  IWLM5,BUFF15,DEGRD5,DISCD5MU050390
               4,DEPTD5,DEPDS5,DISDS5,DEGDS5                                     MU050395
0023            KNUM = 5                                                         MU050400
0024            IF (KNUM .EQ. 1) GO TO 50                                        MU050405
0025            IF (KNUM .EQ. 2) GO TO 55                                        MU050410
0026            IF (KNUM .EQ. 3) GO TO 60                                        MU050415
0027            IF (KNUM .EQ. 4) GO TO 65                                        MU050420
0028            IF (KNUM .EQ. 5) GO TO 70                                        MU050425
0029       50   DO 52 I = 1,8                                                    MU050430
0030       52   DEPTD1(I,1) = DEPTD1(I,1)                                        MU050435
0031            GO TO 75                                                         MU050440
0032       55   DO 57 I = 1,8                                                    MU050445
0033       57   DEPTD1(I,1) = DEPTD2(I,1)                                        MU050450
0034            GO TO 75                                                         MU050455
0035       60   DO 62 I = 1,8                                                    MU050460
0036       62   DEPTD1(I,1) = DEPTD3(I,1)                                        MU050465
0037            GO TO 75                                                         MU050470
0038       65   DO 67 I = 1,8                                                    MU050475
0039       67   DEPTD1(I,1) = DEPTD4(I,1)                                        MU050480
0040            GO TO 75                                                         MU050485
0041       70   DO 72 I = 1,8                                                    MU050490
0042       72   DEPTD1(I,1) = DEPTD5(I,1)                                        MU050495
0043       75   CONTINUE                                                         MU050500
0044            GO TO 500                                                        MU050505
0045      100 CALL BLNK(COLLD2,PCCM2,ENRL2,ICLM2,DPI2,  IWLM2,BUFF12,DEGRD2,     MU050510
             1 DISCD2,DEPTD2,DEPDS1,DISDS1,DEGDS1,KIF,DEPDS5,DISDS5,DEGDS5)      MU050515
0046      200 CALL BLNK(COLLD3,PCCM3,ENRL3,ICLM3,DPI3,  IWLM3,BUFF13,DEGRD3,     MU050520
             1 DISCD3,DEPTD3,DEPDS2,DISDS2,DEGDS2,KIF,DEPDS5,DISDS5,DEGDS5)      MU050525
0047      300 CALL BLNK(COLLD4,PCCM4,ENRL4,ICLM4,DPI4,  IWLM4,BUFF14,DEGRD4,     MU050530
             1 DISCD4,DEPTD4,DEPDS3,DISDS3,DEGDS3,KIF,DEPDS5,DISDS5,DEGDS5)      MU050535
0048      400 CALL BLNK(COLLD5,PCCM5,ENRL5,ICLM5,DPI5,  IWLM5,BUFF15,DEGRD5,     MU050540
             1 DISCD5,DEPTD5,DEPDS4,DISDS4,DEGDS4,KIF,DEPDS5,DISDS5,DEGDS5)      MU050545
          C     TRANSFER FROM THE FIRST POSITION IN BUFF1 TO J1 - J5 THE CORRESPONMU050550
          C     YEAR TO THE DATA                                                 MU050555
0049      500 J1= BUFF11(1)                                                     MU050560
0050            J2=BUFF12(1)                                                     MU050565
0051            J3=BUFF13(1)                                                     MU050570
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0052            J4=BUFF14(1)                                      MU050575
0053            J5=BUFF15(1)                                      MU050580
0054            DO 1000 MN=1,N                                    MU050585
          C     CALL STATEMENTS FOR THE REPORTS 1 - 8.            MU050590
0055            CALL REPT1                                        MU050595
0056            CALL REPT2                                        MU050600
0057            CALL REPT3                                        MU050605
0058            CALL REPT4                                        MU050610
0059            CALL REPT5                                        MU050615
0060            CALL REPT6                                        MU050620
0061            CALL REPT7                                        MU050625
0062            CALL REPT8                                        MU050630
0063       1000 CONTINUE                                          MU050635
0064            GO TO 12                                          MU050640
          C     ERROR MESSAGE IF THE TAPE IS NOT WRITTEN ON.      MU050645
0065         11 WRITE(3,9)                                        MU050650
0066          9 FORMAT(1H1,5X,16HNO FILES ON TAPE )               MU050655
0067         12 CONTINUE                                          MU050660
0068            WRITE (3,301)                                     MU050665
0069        301 FORMAT (1H1)                                      MU050670
0070            CALL EXIT                                         MU050675
0071            END                                               MU050680
```


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COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
CCLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
KIF	138	N	13C	KNUM	140	I	144	MN	148

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	14C	BLNK	150	REPT1	154	REPT2	158	REPT3	15C
REPT4	160	REPT5	164	REPT6	168	REPT7	16C	REPT8	170
EXIT	174								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1001	288	9	294	301	2AD				

TOTAL MEMORY REQUIREMENTS 000A30 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 6

PROGRAM LISTING, REPORTS, BLNK

```
0001                SUBROUTINE BLNK(COLLD,PCCM,ENRL,ICLM,DPI  ,IWLM,BUFF1,DEGRD,DISCD,MU060005
                                                                                    MU060010
                C                                                                   MU060015
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F MU060020
                C     UNDER DOS LEVEL 19.                                           MU060025
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.               MU060030
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970. MU060035
                C     FOR OPERATING INSTRUCTIONS SEE -                              MU060040
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL      MU060045
                C                           INSTITUTION, USERS MANUAL               MU060050
                C          BY COLBY H. SPRINGER, MARCH 1970                         MU060055
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION MU060060
                C          BOULDER, COLORADO  80302                                 MU060065
                C                                                                   MU060070
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT              MU060075
                C          NR OEC-0-8-980708-4533(010)                              MU060080
                C                                                                   MU060085
                C                                                                   MU060090
                     1 DEPTD,DPTDS,DISDS,DEGDS,KIF,DEPDS5,DISDS5,DEGDS5)            MU060095
0002                  DIMENSION COLLD(12), PCCM(8,8), ENRL(5,9),                    MU060100
                     1ICLM(8,10), DPI(8),   IWLM(8,10), BUFF1(71),                  MU060105
                     2DEGRD(8,12), DISCD(8,24), DEPTD(8,24),                        MU060110
                     3DPTDS(8,5),        DISDS(8,5),DEGDS(8,5) ,                    MU060115
                     4DEPDS5(8,5),DISDS5(8,5), DEGDS5(8,5)                          MU060120
0003                  REAL ICLM,IWLM                                                MU060125
                C     SUBROUTINE BLNK WILL ZERO OUT A BLOCK OF DATA FOR THE YEAR THAT THMU060130
                C     HAS BEEN TRANSFERED FROM THE PERAMETER LIST IN THE MAIN PROGRAM MU060135
                C                                                                   MU060140
                C                                                                   MU060145
                C     ZERO OUT COMMON ARRAY AND DESCRIPTIONS                        MU060150
                C                                                                   MU060155
0004                  DO 100 I=1,8                                                  MU060160
0005                  DO 111 J=1,8                                                  MU060165
0006             111  PCCM(I,J)=0.0                                                 MU060170
0007                  DO 112 J=1,10                                                 MU060175
0008                  ICLM (I,J)=0.0                                                MU060180
0009                  IWLM (I,J)=0.0                                                MU060185
0010             112  CONTINUE                                                      MU060190
0011                  DO 113 J=1,12
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0012          113  DEGRD(I,J)=0.0                                                    MU060195
0013               DO 114 J=1,24                                                     MU060200
0014               DISCD(I,J)=0.0                                                    MU060205
0015               DEPTD(I,J)=0.0                                                    MU060210
0016          114  CONTINUE                                                          MU060215
                   C     THIS CHECKS THE FLAG TO SEE IF THE DISCRIPTIONS HAVE ALREADY BEEN MU060220
                   C     ED TO THE 5TH YEAR BLOCK IF NOT THEN TRANSFER IS MADE.     MU060225
0017               IF(KIF.EQ.1) GO TO 100                                            MU060230
0018               DO 115 J=1,5                                                      MU060235
0019               DEPDS5(I,J)=DPTDS(I,J)                                            MU060240
0020               DISDS5(I,J)=DISDS(I,J)                                            MU060245
0021               DEGDS5(I,J)=DEGDS(I,J)                                            MU060250
0022          115  CONTINUE                                                          MU060255
0023          100  CONTINUE                                                          MU060260
0024               DO 116 I=1,12                                                     MU060265
0025          116  COLL0(I)=0.0                                                      MU060270
0026               DO 117 I=1,8                                                      MU060275
0027          117  DPI(I) = 0.0                                                      MU060280
0028               DO 118 I=1,5                                                      MU060285
0029               DO 118 J=1,9                                                      MU060290
0030          118  ENRL(I,J)=0.0                                                     MU060295
0031               DO 130 I=1,71                                                     MU060300
0032          130  BUFF1(I) = 0.0                                                    MU060305
                   C     THE FLAG IS SET TO 1 SO THE DISCRIPTION WILL NOT BE CHANGED AGAIN.MU060310
0033               KIF=1                                                             MU060315
0034               RETURN                                                            MU060320
0035               END                                                               MU060325
```

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
I	C8	J	CC	KIF	D0				

ARRAY MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLC	04	PCCM	D8	ENRL	DC	ICLM	E0	DPI	E4
IWLM	E8	BUFF1	EC	DEGRD	F0	DISCD	F4	DEPTD	F8
DPTDS	FC	DISDS	100	DEGDS	104	DEPDS5	108	DISDS5	10C
DEGDS5	110								

TOTAL MEMORY REQUIREMENTS 000628 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 7

PROGRAM LISTING, REPORTS REPT1

```
0001          SUBROUTINE REPT1                                                  MU070005
        C                                                                       MU070010
        C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F    MU070015
        C     UNDER DOS LEVEL 19.                                               MU070020
        C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                   MU070025
        C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.     MU070030
        C     FOR OPERATING INSTRUCTIONS SEE -                                  MU070035
        C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL          MU070040
        C                           INSTITUTION, USERS MANUAL                   MU070045
        C          BY COLBY H. SPRINGER, MARCH 1970                             MU070050
        C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION   MU070055
        C          BOULDER, COLORADO  80302                                     MU070060
        C                                                                       MU070065
        C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                  MU070070
        C          NR OEC-0-8-980708-4533(010)                                  MU070075
        C                                                                       MU070080
        C                                                                       MU070085
0002          COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU070090
             1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU070095
             2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                            MU070100
0003          COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU070105
             1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU070110
             2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                            MU070115
0004          COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU070120
             1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU070125
             2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                            MU070130
0005          COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU070135
             1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU070140
             2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                            MU070145
0006          COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU070150
             1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU070155
             2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                            MU070160
0007          COMMON J1, J2, J3, J4, J5, YY, MM, DD                             MU070165
0008          REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU070170
0009          REAL MM                                                           MU070175
0010          REAL NUMSS1,NUMSS2,NUMSS3,NUMSS4,NUMSS5                           MU070180
0011          DIMENSION TOTAL (8)                                               MU070185
        C     REPORT 1 GIVES DEPARTMENT DATA AND RESOURCE REQUIREMENTS, INFORMATMU070190
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                C     PE - DEPARTMENT DATA - DEPTD - FOR FIVE YEARS.                                    MU070195
                C                                                                                       MU070200
                C                                                                                       MU070205
                C     LKNT IS A LINE COUNT SO THE REPORT WILL NOT BE SPLIT ON TWO OR MORMU070210
0012                  LKNT=0                                                                            MU070215
0013                  DO 500 K=1,8                                                                      MU070220
0014               500 TOTAL(K) = 0.0                                                                   MU070225
                C     PRINTS THE REPORT TITLE                                                           MU070230
0015                  WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                                            MU070235
0016               1  FORMAT (1H1,    'NAME - ',5A4,25X,23HMICRO-U OUTPUT REPORT I/1X,                  MU070240
                     1A2,'/',A2,'/',A2,36X,41HDEPARTMENT DATA AND RESOURCE REQUIREMENTS                 MU070245
                     2/)                                                                                MU070250
                C     PRINTS YEARS FOR DATA                                                             MU070255
0017                  WRITE(3,2) J1,J2,J3,J4,J5                                                         MU070260
0018               2 FORMAT (33X,5(I4,11X))                                                             MU070265
0019                  DO 20 I=1,8                                                                       MU070270
                C     CHECK IF THE DEPARTMENT NUMBER # 0 , THEN NO DEPARTMENT EXISTS ANDMU070275
                C     IS PRINTED.                                                                       MU070280
0020                  IF (DEPTD1(I,1) .NE. 0.0) GO TO 600                                               MU070285
0021                  IF (DEPTD2(I,1) .NE. 0.0) GO TO 600                                               MU070290
0022                  IF (DEPTD3(I,1) .NE. 0.0) GO TO 600                                               MU070295
0023                  IF (DEPTD4(I,1) .NE. 0.0) GO TO 600                                               MU070300
0024                  IF (DEPTD5(I,1) .NE. 0.0) GO TO 600                                               MU070305
0025                  GO TO 20                                                                          MU070310
0026               600 CONTINUE                                                                         MU070315
                C                                                                                       MU070320
                CLOOP TO GO THROUGH DISCIPLINES CHECKING IF THEY ARE IN THE DEPT. COMPARMU070325
                C DEPARTMENT NUMBERS, IF SO IT ADDS UP THE SEC - NUMBER OF COURSE SECTIOMU070330
                C TO THE SUM FOR THAT DEPARTMENT AND YEAR.                                              MU070335
0027                  SEC1=0.0                                                                          MU070340
0028                  SEC2=0.0                                                                          MU070345
0029                  SEC3=0.0                                                                          MU070350
0030                  SEC4=0.0                                                                          MU070355
0031                  SEC5=0.0                                                                          MU070360
0032                  DO 25 K=1,8                                                                       MU070365
0033                  IF(DISCD1(K,3) -  DEPTD1(I,1))27,26,27                                            MU070370
0034               26 SEC1=SEC1+ICLM1(K,10)                                                             MU070375
0035               27 IF(DISCD2(K,3) -  DEPTD2(I,1))29,28,29                                            MU070380
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0036            28 SEC2=SEC2+ICLM2(K,10)                                                MU070385
0037            29 IF(DISCD3(K,3) -  DEPTD3(I,1))31,30,31                               MU070390
0038            30 SEC3=SEC3+ICLM3(K,10)                                                MU070395
0039            31 IF(DISCD4(K,3) -  DEPTD4(I,1))33,32,33                               MU070400
0040            32 SEC4=SEC4+ICLM4(K,10)                                                MU070405
0041            33 IF(DISCD5(K,3) -  DEPTD5(I,1))25,34,25                               MU070410
0042            34 SEC5=SEC5+ICLM5(K,10)                                                MU070415
0043            25 CONTINUE                                                             MU070420
0044               NUM=DEPTD1(I,1)                                                      MU070425
              C    PRINT DEPARTMENT DISCRIPTION                                        MU070430
0045               WRITE(3,3) (DEPDS5(I,J),J=1,5), NUM                                  MU070435
0046             3 FORMAT(/1X, 5A4, 2X,I2)                                              MU070440
              C    PRINT 5 YEARS DATA FOR DEPT. DATA AND RESOURCE REQUIREMENTS         MU070445
              C    NUMBER OF CLASS SECTIONS, FROM INDUCED COURSE LOAD MATRIX           MU070450
0047               WRITE(3,4) SEC1,SEC2,SEC3,SEC4,SEC5                                  MU070455
0048             4 FORMAT(5X,24HNUMBER OF CLASS SECTIONS,1X,5(F10.0,5X))                MU070460
              C    NUMBER OF FACULTY - TOTAL, DEPTD                                    MU070465
0049               FN1=DEPTD1(I,21) + DEPTD1(I,6)                                       MU070470
0050               FN2=DEPTD2(I,21) + DEPTD2(I,6)                                       MU070475
0051               FN3=DEPTD3(I,21) + DEPTD3(I,6)                                       MU070480
0052               FN4=DEPTD4(I,21) + DEPTD4(I,6)                                       MU070485
0053               FN5=DEPTD5(I,21) + DEPTD5(I,6)                                       MU070490
0054               WRITE(3,5)FN1,FN2,FN3,FN4,FN5                                        MU070495
0055             5 FORMAT(5X,17HNUMBER OF FACULTY,8X,5(F10.2,5X))                       MU070500
              C    NUMBER OF SUPPORT STAFF, DEPTD - ADMINISTRATIVE & SECRETARY         MU070505
0056               NUMSS1=DEPTD1(I,4) + DEPTD1(I,10)                                    MU070510
0057               NUMSS2=DEPTD2(I,4) + DEPTD2(I,10)                                    MU070515
0058               NUMSS3=DEPTD3(I,4) + DEPTD3(I,10)                                    MU070520
0059               NUMSS4=DEPTD4(I,4) + DEPTD4(I,10)                                    MU070525
0060               NUMSS5=DEPTD5(I,4) + DEPTD5(I,10)                                    MU070530
0061               WRITE(3,7)NUMSS1,NUMSS2,NUMSS3,NUMSS4,NUMSS5                         MU070535
0062             7 FORMAT(5X,23HNUMBER OF SUPPORT STAFF,2X,5(F10.2,5X)/)                MU070540
              C    TOTAL FACULTY SALARIES, DEPT                                        MU070545
0063               WRITE(3,6) DEPTD1(I,19),DEPTD2(I,19),DEPTD3(I,19),DEPTD4(I,19),     MU070550
                  1DEPTD5(I,19)                                                        MU070555
0064             6 FORMAT(5X,16HFACULTY SALARIES, 9X,5(F10.0,5X))                       MU070560
              C    SUPPORT STAFF WAGES - NUMBER TIMES THE RESPECTIVE WAGES. - DEPTD    MU070565
0065               SSAL1=DEPTD1(I,4)*DEPTD1(I,5) + DEPTD1(I,9)*DEPTD1(I,10)             MU070570
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0066                SSAL2=DEPTD2(I,4)*DEPTD2(I,5) + DEPTD2(I,9)*DEPTD2(I,10)          MU070575
0067                SSAL3=DEPTD3(I,4)*DEPTD3(I,5) + DEPTD3(I,9)*DEPTD3(I,10)          MU070580
0068                SSAL4=DEPTD4(I,4)*DEPTD4(I,5) + DEPTD4(I,9)*DEPTD4(I,10)          MU070585
0069                SSAL5=DEPTD5(I,4)*DEPTD5(I,5) + DEPTD5(I,9)*DEPTD5(I,10)          MU070590
                C       EXPENSES --TRAVEL--DEPTD                                    MU070595
0070                    WRITE(3,8) SSAL1,SSAL2,SSAL3,SSAL4,SSAL5                    MU070600
0071                  8 FORMAT(5X,19HSUPPORT STAFF WAGES,6X,5(F10.0,5X))            MU070605
0072                    EX1=FN1*DEPTD1(I,11)                                        MU070610
0073                    EX2=FN2*DEPTD2(I,11)                                        MU070615
0074                    EX3=FN3*DEPTD3(I,11)                                        MU070620
0075                    EX4=FN4*DEPTD4(I,11)                                        MU070625
0076                    EX5=FN5*DEPTD5(I,11)                                        MU070630
0077                    WRITE(3,9) EX1,EX2,EX3,EX4,EX5                              MU070635
0078                  9 FORMAT (5X,'EXPENSES - TRAVEL',8X,5(F10.0,5X))              MU070640
                C       OFFICE SUPPLIES - DEPTD                                     MU070645
0079                    WRITE(3,10) DEPTD1(I,12),DEPTD2(I,12),DEPTD3(I,12),DEPTD4(I,12),  MU070650
                       1DEPTD5(I,12)                                                MU070655
0080                 10 FORMAT(5X,15HOFFICE SUPPLIES, 10X,5(F10.0,5X))            MU070660
                C       INSTRUCTION SUPPLIES - DEPTD                                MU070665
0081                    WRITE(3,11) DEPTD1(I,16),DEPTD2(I,16),DEPTD3(I,16),DEPTD4(I,16),  MU070670
                       1DEPTD5(I,16)                                                MU070675
0082                 11 FORMAT(5X,20HINSTRUCTION SUPPLIES,5X,5(F10.0,5X))         MU070680
                C       TOTAL DEPARTMENT COSTS - DEPTD                              MU070685
0083                    WRITE(3,12) DEPTD1(I,20),DEPTD2(I,20),DEPTD3(I,20),DEPTD4(I,20),  MU070690
                       1DEPTD5(I,20)                                                MU070695
0084                 12 FORMAT(7X,21HTOTAL DEPARTMENT COST,2X,5(F10.0,5X))        MU070700
                C       ADD ELEVEN TO LKNT 12 LINES WERE PRONTED IN THIS LOOP       MU070705
0085                    LKNT=LKNT+12                                                MU070710
                C       IF THERE HAVE BEEN 33 OR MORE LINES PRINTED THEN A NEW PAGE WILL  MU070715
                C       HAVE TITLES ON IT                                           MU070720
0086                    IF(LKNT.LT.33)GO TO 19                                      MU070725
0087                    WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                      MU070730
0088                    WRITE(3,2)J1,J2,J3,J4,J5                                    MU070735
0089                    LKNT=0                                                      MU070740
0090                 19 TOTAL(1) = TOTAL(1) + DEPTD1(I,20)                          MU070745
0091                    TOTAL(2) = TOTAL(2) + DEPTD2(I,20)                          MU070750
0092                    TOTAL(3) = TOTAL(3) + DEPTD3(I,20)                          MU070755
0093                    TOTAL(4) = TOTAL(4) + DEPTD4(I,20)                          MU070760
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0094              TOTAL(5) = TOTAL(5) + DEPTD5(I,20)                                  MU070765
0095           20 CONTINUE                                                            MU070770
            C                                                                         MU070775
            C     TOTAL COST ALL DEPARTMENTS                                          MU070780
            C                                                                         MU070785
0096              WRITE (3,13) (TOTAL(K),K=1,5)                                       MU070790
0097           13 FORMAT (//5X,'TOTAL DEPARTMENTAL COSTS',1X,   5(F10.0,5X))          MU070795
0098              RETURN                                                              MU070800
0099              END                                                                 MU070805
```


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COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
LKNT	140	K	144	I	148	SEC1	14C	SEC2	150
SEC3	154	SEC4	158	SEC5	15C	NUM	160	J	164
FN1	168	FN2	16C	FN3	170	FN4	174	FN5	178
NUMSS1	17C	NUMSS2	180	NUMSS3	184	NUMSS4	188	NUMSS5	18C
SSAL1	190	SSAL2	194	SSAL3	198	SSAL4	19C	SSAL5	1A0
EX1	1A4	EX2	1A8	EX3	1AC	EX4	1B0	EX5	1B4

ARRAY MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
TOTAL	1B8								

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	1D8								

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FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	1DC	2	246	3	251	4	25E	5	286
7	2A7	6	2CF	8	2EF	9	312	10	333
11	352	12	376	13	39B				

TOTAL MEMORY REQUIREMENTS 00CEEC BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 8

PROGRAM LISTING, REPORTS REPT2

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0001            SUBROUTINE REPT2                                                MU080005
                C                                                               MU080010
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F  MU080015
                C     UNDER DOS LEVEL 19.                                       MU080020
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.           MU080025
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.  MU080030
                C     FOR OPERATING INSTRUCTIONS SEE -                          MU080035
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL  MU080040
                C                           INSTITUTION, USERS MANUAL           MU080045
                C          BY COLBY H. SPRINGER, MARCH 1970                     MU080050
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION  MU080055
                C          BOULDER, COLORADO  80302                             MU080060
                C                                                               MU080065
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT          MU080070
                C          NR OEC-0-8-980708-4533(010)                          MU080075
                C                                                               MU080080
                C                                                               MU080085
0002             COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU080090
               1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU080095
               2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                          MU080100
0003             COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU080105
               1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU080110
               2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                          MU080115
0004             COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU080120
               1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU080125
               2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                          MU080130
0005             COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU080135
               1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU080140
               2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                          MU080145
0006             COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU080150
               1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU080155
               2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                          MU080160
0007             COMMON J1, J2, J3, J4, J5, YY, MM, DD                          MU080165
0008             REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU080170
0009             REAL MM                                                        MU080175
                C     REPORT 2 IS THE BUDGET PROJECTIONS BASED ON COLLEGE DATA - COLLD -MU080180
                C     RTMENT DATA - DEPTD - FOR 5 YEARS                         MU080185
                C                                                               MU080190
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                C     PRINTS THE REPORT TITLE                                                    MU080195
                      WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                                     MU080200
0010                                                                                             MU080205
0011           1      FORMAT (1H1,    'NAME - ',5A4,24X,24HMICRO-U OUTPUT REPORT II/1X,          MU080210
                     1A2,'/',A2,'/',A2,46X,18HBUDGET PROJECTIONS  )                              MU080215
                C     PRINTS YEARS FOR DATA                                                      MU080220
0012                  WRITE(3,2)J1,J2,J3,J4,J5                                                   MU080225
0013           2      FORMAT (/ 28X,5(I4,11X)/)                                                  MU080230
                C     CENTRAL ADMINISTRATION COSTS - COLLD                                       MU080235
0014                  WRITE(3,3)COLLD1(4),COLLD2(4),COLLD3(4),COLLD4(4),COLLD5(4)                MU080240
0015             3 FORMAT(1X,23HCENTRAL ADMINISTRATION 1X,5(F10.0,5X))                           MU080245
                C     LIBRARY COSTS - COLLD                                                      MU080250
0016                  WRITE(3,4)COLLD1(1),COLLD2(1),COLLD3(1),COLLD4(1),COLLD5(1)                MU080255
0017             4 FORMAT(1X,7HLIBRARY,17X,5(F10.0,5X))                                          MU080260
                C     PHYSICAL PLANT - COLLD                                                     MU080265
0018                  WRITE(3,5)COLLD1(7),COLLD2(7),COLLD3(7),COLLD4(7),COLLD5(7)                MU080270
0019             5 FORMAT(1X,14HPHYSICAL PLANT,10X,5(F10.0,5X))                                  MU080275
0020                  T1=0.0                                                                     MU080280
0021                  T2=0.0                                                                     MU080285
0022                  T3=0.0                                                                     MU080290
0023                  T4=0.0                                                                     MU080295
0024                  T5=0.0                                                                     MU080300
0025                  TT1 = 0.0                                                                  MU080305
0026                  TT2 = 0.0                                                                  MU080310
0027                  TT3 = 0.0                                                                  MU080315
0028                  TT4 = 0.0                                                                  MU080320
0029                  TT5 = 0.0                                                                  MU080325
0030                  DO 30 I=1,7,3                                                              MU080330
0031                  T1=T1+COLLD1(I)                                                            MU080335
0032                  T2=T2+COLLD2(I)                                                            MU080340
0033                  T3=T3+COLLD3(I)                                                            MU080345
0034                  T4=T4+COLLD4(I)                                                            MU080350
0035                  T5=T5+COLLD5(I)                                                            MU080355
0036               30 CONTINUE                                                                   MU080360
                C                                                                              MU080365
                C     TOTAL CENTRAL COSTS                                                      MU080370
                C                                                                              MU080375
0037                  WRITE (3,800)                                                            MU080380
0038            800   FORMAT (25X,5(10(1H-),5X))
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0039          WRITE (3,25) T1,T2,T3,T4,T5                                    MU080385
0040     25   FORMAT (3X,'TOTAL CENTRAL COSTS',3X, 5(F10.0,5X)/)             MU080390
        C     LOOP FOR DEPARTMENT COSTS                                      MU080395
0041          DO 20 I=1,8                                                    MU080400
        C     IF DEPARTMENT NUMBER # 0 NO DEPARTMENT EXISTS AND NO COST DATA IS MU080405
0042          IF (DEPTD1(I,1) .NE. 0.0) GO TO 610                            MU080410
0043          IF (DEPTD2(I,1) .NE. 0.0) GO TO 610                            MU080415
0044          IF (DEPTD3(I,1) .NE. 0.0) GO TO 610                            MU080420
0045          IF (DEPTD4(I,1) .NE. 0.0) GO TO 610                            MU080425
0046          IF (DEPTD5(I,1) .NE. 0.0) GO TO 610                            MU080430
0047          GO TO 20                                                       MU080435
0048    610   CONTINUE                                                       MU080440
0049          T1=T1+DEPTD1(I,20)                                             MU080445
0050          T2=T2+DEPTD2(I,20)                                             MU080450
0051          T3=T3+DEPTD3(I,20)                                             MU080455
0052          T4=T4+DEPTD4(I,20)                                             MU080460
0053          T5=T5+DEPTD5(I,20)                                             MU080465
0054          TT1 = TT1 + DEPTD1(I,20)                                       MU080470
0055          TT2 = TT2 + DEPTD2(I,20)                                       MU080475
0056          TT3 = TT3 + DEPTD3(I,20)                                       MU080480
0057          TT4 = TT4 + DEPTD4(I,20)                                       MU080485
0058          TT5 = TT5 + DEPTD5(I,20)                                       MU080490
        C     DEPARTMENT DESCRIPTINO AND COST FOR DDEPARTMENT                MU080495
0059          WRITE(3,6)(DEPDS5(I,J),J=1,5),DEPTD1(I,20),DEPTD2(I,20),       MU080500
             1DEPTD3(I,20),DEPTD4(I,20),DEPTD5(I,20)                         MU080505
0060        6 FORMAT(1X,5A4,4X,5(F10.0,5X))                                  MU080510
0061       20 CONTINUE                                                       MU080515
0062          WRITE (3,800)                                                  MU080520
0063          WRITE (3,7) TT1,TT2,TT3,TT4,TT5                                MU080525
0064      7   FORMAT (3X,'TOTAL DEPARTMENTAL',4X,5(F10.0,5X)/)               MU080530
0065          WRITE(3,8)T1,T2,T3,T4,T5                                       MU080535
0066      8   FORMAT (1X,'TOTAL',19X,5(F10.0,5X))                            MU080540
0067          RETURN                                                         MU080545
0068          END                                                            MU080550
```

COMMON BLOCK / / MAP SIZE 4820

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2820	DISDS3	28C0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
K	D8	T1	DC	T2	E0	T3	E4	T4	E8
T5	EC	TT1	F0	TT2	F4	TT3	F8	TT4	FC
TT5	100	I	104	J	108				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	10C								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	110	2	163	3	170	4	197	5	1AE
800	1CC	25	1DB	6	1FF	7	211	8	234

TOTAL MEMORY REQUIREMENTS 00C79C BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 9

PROGRAM LISTING, REPORTS, REPT3

```
0001          SUBROUTINE REPT3                                                  MU090005
        C                                                                       MU090010
        C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F    MU090015
        C     UNDER DOS LEVEL 19.                                               MU090020
        C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                   MU090025
        C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.     MU090030
        C     FOR OPERATING INSTRUCTIONS SEE -                                  MU090035
        C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL          MU090040
        C                          INSTITUTION, USERS MANUAL                    MU090045
        C          BY COLBY H. SPRINGER, MARCH 1970                             MU090050
        C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION   MU090055
        C          BOULDER, COLORADO  80302                                     MU090060
        C                                                                       MU090065
        C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                  MU090070
        C          NR OEC-0-8-980708-4533(010)                                  MU090075
        C                                                                       MU090080
        C                                                                       MU090085
0002          COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU090090
             1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU090095
             2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                            MU090100
0003          COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU090105
             1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU090110
             2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                            MU090115
0004          COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU090120
             1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU090125
             2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                            MU090130
0005          COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU090135
             1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU090140
             2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                            MU090145
0006          COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU090150
             1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU090155
             2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                            MU090160
0007          COMMON J1, J2, J3, J4, J5, YY, MM, DD                             MU090165
0008          REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU090170
0009          REAL MM                                                           MU090175
        C     REPORT 3 IS A BUDGET PROJECTION FOR 5 YEARS BASED ON DISCIPLINE DAMU090180
        C                                                                       MU090185
        C     PRINTS THE REPORT TITLE                                           MU090190
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0010                WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                                  MU090195
0011          1     FORMAT (1H1,   'NAME - ',5A4,25X,25HMICRO-U OUTPUT REPORT III /         MU090200
                   11X,A2,'/',A2,'/',A2,41X,32HBUDGET PROJECTIONS BY DISCIPLINE )           MU090205
              C     PRINTS YEARS FOR DATA                                                   MU090210
0012                WRITE(3,2)J1,J2,J3,J4,J5                                                MU090215
0013          2     FORMAT (/33X,5(I4,11X)/)                                                MU090220
0014                T1 = 0.0                                                                MU090225
0015                T2 = 0.0                                                                MU090230
0016                T3 = 0.0                                                                MU090235
0017                T4 = 0.0                                                                MU090240
0018                T5 = 0.0                                                                MU090245
              C     LOOP TO ALLOW FOR 8 DISCIPLINES TO BE ACCOUNTED FOR                     MU090250
0019                DO 5 I=1,8                                                              MU090255
              C     IF THE DEPARTMENT NUMBER FOR THE DISCIPLINE IS # 0 THE THERE DOES       MU090260
              C     ST A DISCIPLINE AND NO DATA IS PRINTED.                                 MU090265
0020                IF (DISCD1(I,3) .NE. 0.0) GO TO 600                                     MU090270
0021                IF (DISCD2(I,3) .NE. 0.0) GO TO 600                                     MU090275
0022                IF (DISCD3(I,3) .NE. 0.0) GO TO 600                                     MU090280
0023                IF (DISCD4(I,3) .NE. 0.0) GO TO 600                                     MU090285
0024                IF (DISCD5(I,3) .NE. 0.0) GO TO 600                                     MU090290
0025                GO TO 5                                                                 MU090295
0026          600   CONTINUE                                                                MU090300
0027                T1 = T1 + DISCD1(I,10)                                                  MU090305
0028                T2 = T2 + DISCD2(I,10)                                                  MU090310
0029                T3 = T3 + DISCD3(I,10)                                                  MU090315
0030                T4 = T4 + DISCD4(I,10)                                                  MU090320
0031                T5 = T5 + DISCD5(I,10)                                                  MU090325
              C     PRINT THE DISCIPLINE DISCRIPTIN AND COST DATA - DISCD                   MU090330
0032                WRITE(3,4) (DISDS5(I,J),J=1,5),DISCD1(I,10),DISCD2(I,10),               MU090335
                   1DISCD3(I,10),DISCD4(I,10),DISCD5(I,10)                                  MU090340
0033             4 FORMAT(5X,5A4,5X,5(F10.0,5X))                                           MU090345
0034             5 CONTINUE                                                                MU090350
0035                WRITE (3,6) T1,T2,T3,T4,T5                                              MU090355
0036          6     FORMAT (/7X,'TOTAL',18X,5(F10.0,5X))                                    MU090360
0037                RETURN                                                                  MU090365
0038                END                                                                     MU090370
```

COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2820	DISDS3	28C0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

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SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
K	D4	T1	D8	T2	DC	T3	E0	T4	E4
T5	E8	I	EC	J	F0				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	F4								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	F8	2	15A	4	167	6	179		

TOTAL MEMORY REQUIREMENTS 000470 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 10

PROGRAM LISTING, REPORTS, REPT4

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0001          SUBROUTINE REPT4                                                  MU100005
        C                                                                       MU100010
        C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F    MU100015
        C     UNDER DOS LEVEL 19.                                               MU100020
        C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                   MU100025
        C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.     MU100030
        C     FOR OPERATING INSTRUCTIONS SEE -                                  MU100035
        C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL          MU100040
        C                           INSTITUTION, USERS MANUAL                   MU100045
        C          BY COLBY H. SPRINGER, MARCH 1970                             MU100050
        C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION   MU100055
        C          BOULDER, COLORADO  80302                                     MU100060
        C                                                                       MU100065
        C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                  MU100070
        C          NR OEC-0-8-980708-4533(010)                                  MU100075
        C                                                                       MU100080
        C                                                                       MU100085
0002          COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU100090
             1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU100095
             2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                            MU100100
0003          COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU100105
             1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU100110
             2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                            MU100115
0004          COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU100120
             1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU100125
             2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                            MU100130
0005          COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU100135
             1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU100140
             2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                            MU100145
0006          COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU100150
             1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU100155
             2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                            MU100160
0007          COMMON J1, J2, J3, J4, J5, YY, MM, DD                             MU100165
0008          REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU100170
0009          REAL MM                                                           MU100175
0010          REAL NUM1,NUM2,NUM3,NUM4,NUM5                                     MU100180
        C     REPORT 4 IS THE PROJECTED DISCIPLINE COSTS PER WEEKLY STUDENT CONTMU100185
        C     FOR  5 YEARS USING DISCIPLINE DATA - DISCD.                       MU100190
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                C                                                                   MU100195
                C     PRINTS THE REPORT TITLE                                       MU100200
0011                  WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                        MU100205
0012            1     FORMAT (10(/),1X,'NAME - ',5A4,25X,24HMICRO-U OUTPUT REPORT IV/1X,MU100210
                     1A2,'/',A2,'/',A2,40X,35HPROJECTED DISCIPLINE COSTS PER WSCH )  MU100215
                C     PRINTS YEARS FOR DATA                                         MU100220
0013                  WRITE(3,2) J1,J2,J3,J4,J5                                     MU100225
0014            2     FORMAT (/33X,5(I4,11X)/)                                      MU100230
0015                  NUM1 = 0.0                                                    MU100235
0016                  NUM2 = 0.0                                                    MU100240
0017                  NUM3 = 0.0                                                    MU100245
0018                  NUM4 = 0.0                                                    MU100250
0019                  NUM5 = 0.0                                                    MU100255
0020                  T1 = 0.0                                                      MU100260
0021                  T2 = 0.0                                                      MU100265
0022                  T3 = 0.0                                                      MU100270
0023                  T4 = 0.0                                                      MU100275
0024                  T5 = 0.0                                                      MU100280
                C     LOOP TO ALLOW FOR 8 DISCIPLINES                               MU100285
0025                  DO 5 I=1,8                                                    MU100290
                C     IF THE DEPARTMENT NUMBER FOR THE DISCIPLINE IS # 0 THEN THERE IS NMU100295
                C     PLINE AND NO COST DATA IS PRINTED.                            MU100300
0026                  IF (DISCD1(I,3) .NE. 0.0) GO TO 600                           MU100305
0027                  IF (DISCD2(I,3) .NE. 0.0) GO TO 600                           MU100310
0028                  IF (DISCD3(I,3) .NE. 0.0) GO TO 600                           MU100315
0029                  IF (DISCD4(I,3) .NE. 0.0) GO TO 600                           MU100320
0030                  IF (DISCD5(I,3) .NE. 0.0) GO TO 600                           MU100325
0031                  GO TO 5                                                       MU100330
0032            600   CONTINUE                                                      MU100335
                C     DISCIPLINE DISCRIPTION AND COST PER WSCH IS PRINTED           MU100340
0033                  WRITE(3,4) (DISDS5(I,J),J=1,5),DISCD1(I,20),DISCD2(I,20)      MU100345
                     1,DISCD3(I,20),DISCD4(I,20),DISCD5(I,20)                       MU100350
0034                4 FORMAT(5X,5A4,5X,5(F10.0,5X))                                 MU100355
0035                  T1 = T1 + DISCD1(I,10)                                        MU100360
0036                  T2 = T2 + DISCD2(I,10)                                        MU100365
0037                  T3 = T3 + DISCD3(I,10)                                        MU100370
0038                  T4 = T4 + DISCD4(I,10)                                        MU100375
0039                  T5 = T5 + DISCD5(I,10)                                        MU100380
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0040            5 CONTINUE                                                  MU100385
0041              DO 603 I = 1,8                                            MU100390
0042              NUM1 = NUM1 + IWLM1(I,9)                                  MU100395
0043              NUM2 = NUM2 + IWLM2(I,9)                                  MU100400
0044              NUM3 = NUM3 + IWLM3(I,9)                                  MU100405
0045              NUM4 = NUM4 + IWLM4(I,9)                                  MU100410
0046              NUM5 = NUM5 + IWLM5(I,9)                                  MU100415
0047        603   CONTINUE                                                  MU100420
0048              IF (NUM1.EQ. 0.0) GO TO 20                                MU100425
0049              GO TO 21                                                  MU100430
0050        20    T1 = 0.0                                                  MU100435
0051              GO TO 22                                                  MU100440
0052        21    T1 = T1 / NUM1                                            MU100445
0053        22    IF (NUM2 .EQ. 0.0) GO TO 25                               MU100450
0054              GO TO 26                                                  MU100455
0055        25    T2 = 0.0                                                  MU100460
0056              GO TO 27                                                  MU100465
0057        26    T2 = T2 / NUM2                                            MU100470
0058        27    IF (NUM3 .EQ. 0.0) GO TO 30                               MU100475
0059              GO TO 31                                                  MU100480
0060        30    T3 = 0.0                                                  MU100485
0061              GO TO 32                                                  MU100490
0062        31    T3 = T3 / NUM3                                            MU100495
0063        32    IF (NUM4 .EQ. 0.0) GO TO 35                               MU100500
0064              GO TO 36                                                  MU100505
0065        35    T4 = 0.0                                                  MU100510
0066              GO TO 37                                                  MU100515
0067        36    T4 = T4 / NUM4                                            MU100520
0068        37    IF (NUM5 .EQ. 0.0) GO TO 40                               MU100525
0069              GO TO 41                                                  MU100530
0070        40    T5 = 0.0                                                  MU100535
0071              GO TO 42                                                  MU100540
0072        41    T5 = T5 / NUM5                                            MU100545
0073        42    CONTINUE                                                  MU100550
0074              WRITE (3,50) T1,T2,T3,T4,T5                               MU100555
0075        50    FORMAT (/ 7X,'AVERAGE COST',11X,5( F10.0,5X))             MU100560
0076              RETURN                                                    MU100565
0077              END                                                       MU100570
```

COMMON BLOCK / / MAP SIZE 4820

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	020	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4800	J2	4804	J3	4808	J4	480C	J5	4810
YY	4814	MM	4818	DD	481C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
K	164	NUM1	168	NUM2	16C	NUM3	170	NUM4	174
NUM5	178	I1	17C	T2	180	T3	184	T4	188
T5	18C	I	190	J	194				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	198								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	19C	2	203	4	210	50	222		

TOTAL MEMORY REQUIREMENTS 0006D0 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

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APPENDIX D 11

PROGRAM LISTING, REPORTS, REPT5

```
0001            SUBROUTINE REPT5                                                        MU110005
                C                                                                       MU110010
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F     MU110015
                C     UNDER DCS LEVEL 19.                                               MU110020
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                   MU110025
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.     MU110030
                C     FOR OPERATING INSTRUCTIONS SEE -                                  MU110035
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL          MU110040
                C                           INSTITUTION, USERS MANUAL                   MU110045
                C          BY COLBY H. SPRINGER, MARCH 1970                             MU110050
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION   MU110055
                C          BOULDER, COLORADO  80302                                     MU110060
                C                                                                       MU110065
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                  MU110070
                C          NR OEC-0-8-980708-4533(010)                                  MU110075
                C                                                                       MU110080
                C                                                                       MU110085
0002            COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),        MU110090
               1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),      MU110095
               2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                                  MU110100
0003            COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),        MU110105
               1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),      MU110110
               2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                                  MU110115
0004            COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),        MU110120
               1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),      MU110125
               2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                                  MU110130
0005            COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),        MU110135
               1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),      MU110140
               2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                                  MU110145
0006            COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),        MU110150
               1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),      MU110155
               2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                                  MU110160
0007            COMMON J1, J2, J3, J4, J5, YY, MM, DD                                   MU110165
0008            REAL MM                                                                 MU110170
0009            REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5        MU110175
                C     REPORT 5 IS A BUDGET REPORT BY DEGREE PROGRAMS DIVIDED INTO DISCIPMU110180
                C     WRITE THE DEGREE PROGRAM DISCRIPTION                              MU110185
                C                                                                       MU110190
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0010              LKNT=0                                                          MU110195
            C     PRINTS THE REPORT TITLE                                         MU110200
0011              WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                          MU110205
0012          1   FORMAT (1H1,    'NAME - ',5A4,28X,23HMICRO-U OUTPUT REPORT V /  MU110210
                 154X,28HDEGREE PROGRAM BUDGET REPORT  /1X,A2,'/',A2,'/',A2,52X,  MU110215
                 2'BY DISCIPLINE')                                                MU110220
            C     PRINTS YEARS FOR DATA                                           MU110225
0013              WRITE(3,2) J1,J2,J3,J4,J5                                       MU110230
0014            2 FORMAT(/33X,5(I4,11X))                                          MU110235
            C     MLOOP TO ALLOW UP TO 8 DEGREE PROGRAMS                          MU110240
0015              DO 10 I=1,8                                                     MU110245
            C     IF THE DEGREE COST IS 0 FOR ALL FIVE YEARS THEN NO DATA IS PRINTEDMU110250
0016              IF(DEGRD1(I,3).EQ.0.0.AND.DEGRD2(I,3).EQ.0.0.AND.DEGRD3(I,3).EQ.0.MU110255
                 10.AND.DEGRD4(I,3).EQ.0.0.AND.DEGRD5(I,3).EQ.0.0) GO TO 10       MU110260
0017              WRITE(3,3)(DEGDS5(I,J),J=1,5)                                   MU110265
0018            3 FORMAT(//1X,5A4)                                                MU110270
            C     LOOP TO ALLOW FOR UP TO 8 DISCIPLINES TO BE INCLUDED IN EACH DEGREMU110275
0019              DO 20 K=1,8                                                     MU110280
            C     IF THE PCCM PERCENT #0.0 FOR ALL 5 YEARS THEN THE DISCIPLINE IS NOMU110285
            C     ED IN THAT DEGREE PROGRAM.                                      MU110290
0020              IF(PCCM1(K,I).EQ.0.0.AND.PCCM2(K,I).EQ.0.0.AND.PCCM3(K,I).EQ.0.0.AMU110295
                 1ND.PCCM4(K,I).EQ.0.0.AND.PCCM5(K,I).EQ.0.0) GO TO 20            MU110300
            C     THE COST OF A DISCIPLINE FOR A DEGREE PROGRAM WILL BE THE PERCENT MU110305
            C     PLINE COST TO THE DEGREE PROGRAM TIMES THE TOTAL DISCIPLINE COST -MU110310
            C     THE PROGRAM CONTRIBUTION MATRIX TIMES DISCD.                    MU110315
0021              COST1 = PCCM1(K,I)*DISCD1(K,10)                                 MU110320
0022              COST2 = PCCM2(K,I)*DISCD2(K,10)                                 MU110325
0023              COST3 = PCCM3(K,I)*DISCD3(K,10)                                 MU110330
0024              COST4 = PCCM4(K,I)*DISCD4(K,10)                                 MU110335
0025              COST5 = PCCM5(K,I)*DISCD5(K,10)                                 MU110340
            C     PRINT DISCIPLINE DISCRIPTION AND THE RELATED COSTS              MU110345
0026              WRITE(3,4) (DISDS5(K,L),L=1,5),COST1,COST2,COST3,COST4,COST5    MU110350
0027            4 FORMAT(5X,5A4,5X,    5(F10.0,5X))                               MU110355
            C     ADD ONE TO LINE COUNT                                           MU110360
0028              LKNT=LKNT+1                                                     MU110365
0029           20 CONTINUE                                                        MU110370
0030              WRITE (3,5)                                                     MU110375
0031            5 FORMAT(30X,5(10(1H-),5X))                                       MU110380
```

```
C       WRITE THE TOTAL DEGREE COST                                          MU110385
0032          WRITE(3,6)DEGRD1(I,3),DEGRD2(I,3),DEGRD3(I,3),DEGRD4(I,3),     MU110390
             1DEGRD5(I,3)                                                     MU110395
0033        6 FORMAT(14X,6HTOTAL ,10X,5(    F10.0,5X))                       MU110400
0034          LKNT=LKNT+5                                                    MU110405
C       IF THERE HAVE BEEN 35 OR MORE LINES PRINTED A NEW PAGE WILL HAVE     MU110410
C       THE TITLES ON IT                                                     MU110415
0035          IF(LKNT.LT.35) GO TO 10                                        MU110420
0036          WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                         MU110425
0037          WRITE(3,2)J1,J2,J3,J4,J5                                       MU110430
0038          LKNT=0                                                         MU110435
0039       10 CONTINUE                                                       MU110440
0040          RETURN                                                         MU110445
0041          END                                                            MU110450
```

COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
CCLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

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SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
LKNT	D8	K	DC	I	E0	J	E4	COST1	E8
COST2	EC	COST3	F0	COST4	F4	COST5	F8	L	FC

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SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	100								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	104	2	172	3	17E	4	188	5	19A
6	1A9								

TOTAL MEMORY REQUIREMENTS 000754 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 12

PROGRAM LISTING, REPORTS, REPT6

```
0001            SUBROUTINE REPT6                                                        MU120005
                C                                                                       MU120010
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F     MU120015
                C     UNDER DOS LEVEL 19.                                               MU120020
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.                   MU120025
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.     MU120030
                C     FOR OPERATING INSTRUCTIONS SEE -                                  MU120035
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL          MU120040
                C                           INSTITUTION, USERS MANUAL                   MU120045
                C          BY COLBY H. SPRINGER, MARCH 1970                             MU120050
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION   MU120055
                C          BOULDER, COLORADO  80302                                     MU120060
                C                                                                       MU120065
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT                  MU120070
                C          NR OEC-0-8-980708-4533(010)                                  MU120075
                C                                                                       MU120080
                C                                                                       MU120085
0002             COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),      MU120090
                1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU120095
                2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                                 MU120100
0003             COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),      MU120105
                1 IWLM2(6,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU120110
                2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                                 MU120115
0004             COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),      MU120120
                1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU120125
                2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                                 MU120130
0005             COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),      MU120135
                1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU120140
                2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                                 MU120145
0006             COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),      MU120150
                1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU120155
                2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                                 MU120160
0007             COMMON J1, J2, J3, J4, J5, YY, MM, DD                                  MU120165
0008             REAL MM                                                                MU120170
0009             REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5      MU120175
0010             REAL NUM1,NUM2,NUM3,NUM4,NUM5                                          MU120180
                C     REPORT 6 IS THE DEGREE PROGRAM COSTS  PER WEEKLY STUDENT CONTACT HMU120185
                C                                                                       MU120190
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                C     PRINTS THE REPORT TITLE                                                  MU120195
0011                  WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                                   MU120200
0012             1    FORMAT (1H1,   'NAME - ',5A4,26X,24HMICRO-U OUTPUT REPORT VI/1X,         MU120205
                    1A2,'/',A2,'/',A2,39X,'DEGREE PROGRAM ANNUAL COSTS PER WSCH')             MU120210
                C     PRINTS YEARS FOR DATA                                                    MU120215
0013                  WRITE(3,2) J1,J2,J3,J4,J5                                                MU120220
0014             2    FORMAT (/33X,5(I4,11X)/)                                                 MU120225
0015                  NUM1 = 0.0                                                               MU120230
0016                  NUM2 = 0.0                                                               MU120235
0017                  NUM3 = 0.0                                                               MU120240
0018                  NUM4 = 0.0                                                               MU120245
0019                  NUM5 = 0.0                                                               MU120250
0020                  T1 = 0.0                                                                 MU120255
0021                  T2 = 0.0                                                                 MU120260
0022                  T4 = 0.0                                                                 MU120270
0023                  T3 = 0.0                                                                 MU120265
0024                  T5 = 0.0                                                                 MU120275
                C     LOOP TO ALLOW FOR UP TO 8 DEGREE PROGRAMS                                MU120280
0025                  DO 10 I=1,8                                                              MU120285
                C     IS THE DEGREE COST FOR ALL 5 YEARS IS 0 THEN NO DEGREE EXISTS AND        MU120290
                C     S PRINTED                                                                MU120295
0026                  IF(DEGRD1(I,3).EQ.0.0.AND.DEGRD2(I,3).EQ.0.0.AND.DEGRD3(I,3).EQ.0.MU120300
                    U0.AND.DEGRD4(I,3).EQ.0.0.AND.DEGRD5(I,3).EQ.0.0) GO TO 10             MU120305
                C     INITIALIZE THE COST PER WEEKLY STUDENT CREDIT HOURS TO 0.0 FOR 5 YMU120310
0027                  CWSCH1=0.0                                                               MU120315
0028                  CWSCH2=0.0                                                               MU120320
0029                  CWSCH3=0.0                                                               MU120325
0030                  CWSCH4=0.0                                                               MU120330
0031                  CWSCH5=0.0                                                               MU120335
                C     INITIALIZE THE SUM OF WSCH PER DEGREE PROGRAM                            MU120340
0032                  S1=0.0                                                                   MU120345
0033                  S2=0.0                                                                   MU120350
0034                  S3=0.0                                                                   MU120355
0035                  S4=0.0                                                                   MU120360
0036                  S5=0.0                                                                   MU120365
                C                                                                              MU120370
                C     SUM THE INSTRUCTIONAL WORK LOAD MATRIX ACROSS THE DEGREES TO GET WMU120375
0037                  DO 20 K=1,8                                                              MU120380
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0038              S1=S1+IWLM1(K,I)                                                    MU120385
0039              S2=S2+IWLM2(K,I)                                                    MU120390
0040              S3=S3+IWLM3(K,I)                                                    MU120395
0041              S4=S4+IWLM4(K,I)                                                    MU120400
0042              S5=S5+IWLM5(K,I)                                                    MU120405
0043           20 CONTINUE                                                          MU120410
               C     THE IF STATEMENTS CHECKS TO BE SURE THERE IS NO DIVISION BY 0 IF TMU120415
               C     IS EQUAL TO 0 THEN THE CWSCH IS LEFT AT 0.0.                   MU120420
0044              IF(S1.EQ.0.0) GO TO 5                                            MU120425
0045              CWSCH1=DEGRD1(I,3)/S1                                            MU120430
0046            5 IF(S2.EQ.0.0) GO TO 6                                            MU120435
0047              CWSCH2=DEGRD2(I,3)/S2                                            MU120440
0048            6 IF(S3.EQ.0.0) GO TO 7                                            MU120445
0049              CWSCH3=DEGRD3(I,3)/S3                                            MU120450
0050            7 IF(S4.EQ.0.0) GO TO 8                                            MU120455
0051              CWSCH4=DEGRD4(I,3)/S4                                            MU120460
0052            8 IF(S5.EQ.0.0) GO TO 9                                            MU120465
0053              CWSCH5=DEGRD5(I,3)/S5                                            MU120470
               C     PRINT THE COSTS THAT ARE COMPUTED                           MU120475
0054            9 WRITE (3,4)(DEGDS5(I,J),J=1,5),CWSCH1,CWSCH2,CWSCH3,CWSCH4,CWSCH5 MU120480
0055            4 FORMAT(5X,5A4,5X,5(F10.0,5X))                                    MU120485
0056           10 CONTINUE                                                         MU120490
0057              DO 603 I = 1,8                                                   MU120495
0058              T1 = T1 + DEGRD1(I,3)                                            MU120500
0059              T2 = T2 + DEGRD2(I,3)                                            MU120505
0060              T3 = T3 + DEGRD3(I,3)                                            MU120510
0061              T4 = T4 + DEGRD4(I,3)                                            MU120515
0062              T5 = T5 + DEGRD5(I,3)                                            MU120520
0063              NUM1 = NUM1 + IWLM1(I,9)                                         MU120525
0064              NUM2 = NUM2 + IWLM2(I,9)                                         MU120530
0065              NUM3 = NUM3 + IWLM3(I,9)                                         MU120535
0066              NUM4 = NUM4 + IWLM4(I,9)                                         MU120540
0067              NUM5 = NUM5 + IWLM5(I,9)                                         MU120545
0068          603 CONTINUE                                                         MU120550
0069              IF (NUM1.EQ. 0.0) GO TO 200                                      MU120555
0070              GO TO 210                                                        MU120560
0071          200 T1 = 0.0                                                         MU120565
0072              GO TO 220                                                        MU120570
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0073          210  T1 = T1 / NUM1                                                  MU120575
0074          220  IF (NUM2 .EQ. 0.0) GO TO 250                                    MU120580
0075               GO TO 260                                                       MU120585
0076          250  T2 = 0.0                                                        MU120590
0077               GO TO 270                                                       MU120595
0078          260  T2 = T2 / NUM2                                                  MU120600
0079          270  IF (NUM3 .EQ. 0.0) GO TO 300                                    MU120605
0080               GO TO 310                                                       MU120610
0081          300  T3 = 0.0                                                        MU120615
0082               GO TO 320                                                       MU120620
0083          310  T3 = T3 / NUM3                                                  MU120625
0084          320  IF (NUM4 .EQ. 0.0) GO TO 350                                    MU120630
0085               GO TO 360                                                       MU120635
0086          350  T4 = 0.0                                                        MU120640
0087               GO TO 370                                                       MU120645
0088          360  T4 = T4 / NUM4                                                  MU120650
0089          370  IF (NUM5 .EQ. 0.0) GO TO 400                                    MU120655
0090               GO TO 410                                                       MU120660
0091          400  T5 = 0.0                                                        MU120665
0092               GO TO 420                                                       MU120670
0093          410  T5 = T5 / NUM5                                                  MU120675
0094          420  CONTINUE                                                        MU120680
0095               WRITE (3,50) T1,T2,T3,T4,T5                                     MU120685
0096          50   FORMAT (/ 7X,'AVERAGE COST',11X,5( F10.0,5X))                   MU120690
0097               RETURN                                                          MU120695
0098               END                                                             MU120700
```

COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1060	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4314	MM	4B18	DD	4B1C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
K	1BC	NUM1	19C	NUM2	194	NUM3	198	NUM4	19C
NUM5	1A0	T1	1A4	T2	1A8	T4	1AC	T3	1B0
T5	1B4	I	1B8	CWSCH1	1BC	CWSCH2	1C0	CWSCH3	1C4
CWSCH4	1C8	CWSCH5	1CC	S1	1D0	S2	1D4	S3	1D8
S4	1DC	S5	1EC	J	1E4				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	1E8								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	1EC	2	251	4	25E	50	270		

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TOTAL MEMORY REQUIREMENTS 0008E8 BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

APPENDIX D 13

PROGRAM LISTING, REPORTS, REPT7

```
0001            SUBROUTINE REPT7                                                    MU130005
                C                                                                   MU130010
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F MU130015
                C     UNDER DOS LEVEL 19.                                           MU130020
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.               MU130025
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970. MU130030
                C     FOR OPERATING. INSTRUCTIONS SEE -                             MU130035
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL      MU130040
                C                           INSTITUTION, USERS MANUAL               MU130045
                C          BY COLBY H. SPRINGER, MARCH 1970                         MU130050
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION MU130055
                C          BOULDER, COLORADO  80302                                 MU130060
                C                                                                   MU130065
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT              MU130070
                C          NR OEC-0-8-980708-4533(010)                              MU130075
                C                                                                   MU130080
                C                                                                   MU130085
0002             COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),   MU130090
                1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU130095
                2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                             MU130100
0003             COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),   MU130105
                1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU130110
                2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                             MU130115
0004             COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),   MU130120
                1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU130125
                2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                             MU130130
0005             COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),   MU130135
                1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU130140
                2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                             MU130145
0006             COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),   MU130150
                1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU130155
                2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                             MU130160
0007             COMMON J1, J2, J3, J4, J5, YY, MM, DD                              MU130165
0008             REAL MM                                                            MU130170
0009             REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5   MU130175
                C     REPORT 7 GIVES THE DEGREE PROGRAM COSTS PER STUDENT IN THE MAJOR MU130180
                C                                                                   MU130185
                C     PRINTS THE REPORT TITLE                                       MU130190
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0010          WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                          MU130195
0011      1   FORMAT(10(/),1X,'NAME - ',5A4,26X,25HMICRO-U OUTPUT REPORT VII/  MU130200
             11X,A2,'/',A2,'/',A2,36X,                                        MU130205
             2'ANNUAL COSTS PER STUDENT IN DEGREE PROGRAMS')                  MU130210
          C   PRINTS YEARS FOR DATA                                           MU130215
0012          WRITE(3,2) J1,J2,J3,J4,J5                                       MU130220
0013      2   FORMAT (/33X,5(I4,11X)/)                                        MU130225
0014          T1 = 0.0                                                        MU130230
0015          T2 = 0.0                                                        MU130235
0016          T3 = 0.0                                                        MU130240
0017          T4 = 0.0                                                        MU130245
0018          T5 = 0.0                                                        MU130250
0019          DO 10 I=1,8                                                     MU130255
          C   IF THE DEGREE COST FOR ALL 5 YEARS IS 0 THEN NO DEGREE EXISTS NO DMU130260
          C   TED.                                                            MU130265
0020          IF(DEGRD1(I,3).EQ.0.0.AND.DEGRD2(I,3).EQ.0.0.AND.DEGRD3(I,3).EQ.0.MU130270
             U0.AND.DEGRD4(I,3).EQ.0.0.AND.DEGRD5(I,3).EQ.0.0) GO TO 10       MU130275
          C   INITIALIZE THE COST / MAJOR TO 0.0                              MU130280
0021          CPMAJ1=0.0                                                      MU130285
0022          CPMAJ2=0.0                                                      MU130290
0023          CPMAJ3=0.0                                                      MU130295
0024          CPMAJ4=0.0                                                      MU130300
0025          CPMAJ5=0.0                                                      MU130305
          C   IF STATEMENTS ARE TO MAKE SURE THERE IS NO DIVISION BY 0.0 THAT ISMU130310
          C   E ARE NO MAJORS.                                                MU130315
0026          IF(DEGRD1(I,8).EQ.0.0) GO TO 5                                  MU130320
0027          CPMAJ1=DEGRD1(I,3)/DEGRD1(I,8)                                  MU130325
0028        5 IF(DEGRD2(I,8).EQ.0.0) GO TO 6                                  MU130330
0029          CPMAJ2=DEGRD2(I,3)/DEGRD2(I,8)                                  MU130335
0030        6 IF(DEGRD3(I,8).EQ.0.0) GO TO 7                                  MU130340
0031          CPMAJ3=DEGRD3(I,3)/DEGRD3(I,8)                                  MU130345
0032        7 IF(DEGRD4(I,8).EQ.0.0) GO TO 8                                  MU130350
0033          CPMAJ4=DEGRD4(I,3)/DEGRD4(I,8)                                  MU130355
0034        8 IF(DEGRD5(I,8).EQ.0.0) GO TO 9                                  MU130360
0035          CPMAJ5=DEGRD5(I,3)/DEGRD5(I,8)                                  MU130365
          C   PRINT THE DEGREE DISCRIPTION AND THE COSTS RESPECTIVELY         MU130370
0036        9 WRITE(3,4)(DEGDS5(I,J),J=1,5),CPMAJ1,CPMAJ2,CPMAJ3,CPMAJ4,CPMAJ5 MU130375
0037        4 FORMAT(5X,5A4,5X,5(F10.0,5X))                                   MU130380
```

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0038          10 CONTINUE                                                    MU130385
0039             DO 603 I = 1,8                                              MU130390
0040             T1 = T1 + DEGRD1(I,3)                                       MU130395
0041             T2 = T2 + DEGRD2(I,3)                                       MU130400
0042             T3 = T3 + DEGRD3(I,3)                                       MU130405
0043             T4 = T4 + DEGRD4(I,3)                                       MU130410
0044             T5 = T5 + DEGRD5(I,3)                                       MU130415
0045         603 CONTINUE                                                    MU130420
0046             IF (ENRL1(1,9) .EQ. 0.0) GO TO 200                          MU130425
0047             GO TO 210                                                   MU130430
0048         200 T1 = 0.0                                                    MU130435
0049             GO TO 220                                                   MU130440
0050         210 T1 = T1 / ENRL1(1,9)                                        MU130445
0051         220 IF (ENRL2(1,9) .EQ. 0.0) GO TO 250                          MU130450
0052             GO TO 260                                                   MU130455
0053         250 T2 = 0.0                                                    MU130460
0054             GO TO 270                                                   MU130465
0055         260 T2 = T2 / ENRL2(1,9)                                        MU130470
0056         270 IF (ENRL3(1,9) .EQ. 0.0) GO TO 300                          MU130475
0057             GO TO 310                                                   MU130480
0058         300 T3 = 0.0                                                    MU130485
0059             GO TO 320                                                   MU130490
0060         310 T3 = T3 / ENRL3(1,9)                                        MU130495
0061         320 IF (ENRL4(1,9) .EQ. 0.0) GO TO 350                          MU130500
0062             GO TO 360                                                   MU130505
0063         350 T4 = 0.0                                                    MU130510
0064             GO TO 370                                                   MU130515
0065         360 T4 = T4 / ENRL4(1,9)                                        MU130520
0066         370 IF (ENRL5(1,9) .EQ. 0.0) GO TO 400                          MU130525
0067             GO TO 410                                                   MU130530
0068         400 T5 = 0.0                                                    MU130535
0069             GO TO 420                                                   MU130540
0070         410 T5 = T5 / ENRL5(1,9)                                        MU130545
0071         420 CONTINUE                                                    MU130550
0072             WRITE (3,50) T1,T2,T3,T4,T5                                 MU130555
0073          50 FORMAT (/ 7X,'AVERAGE COST',11X,5( F10.0,5X))               MU130560
0074             RETURN                                                      MU130565
0075             END                                                         MU130570
```

COMMON BLOCK / / MAP SIZE 4820

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DCC	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E3C	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B0C	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
K	188	T1	18C	T2	190	T3	194	T4	198
T5	19C	I	1A0	CPMAJ1	1A4	CPMAJ2	1A8	CPMAJ3	1AC
CPMAJ4	1B0	CPMAJ5	1B4	J	1B8				

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	1BC								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	100	2	230	4	23D	50	24F		

TOTAL MEMORY REQUIREMENTS 00078C BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

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APPENDIX D 14

PROGRAM LISTING, REPORTS, REPT8

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0001            SUBROUTINE REPT8                                                MU140005
                C                                                               MU140010
                C     THIS PROGRAM WAS WRITTEN USING USASI FORTRAN IV ON AN IBM 360F  MU140015
                C     UNDER DOS LEVEL 19.                                       MU140020
                C     ORIGINAL PROGRAMS WERE WRITTEN IN JANUARY 1970.           MU140025
                C     THIS VERSION - MICRO - U 70.1 WAS COMPLETED IN FEBRUARY 1970.  MU140030
                C     FOR OPERATING INSTRUCTIONS SEE -                          MU140035
                C          MICRO - U 70.1 - TRAINING MODEL OF AN INSTRUCTIONAL  MU140040
                C                           INSTITUTION, USERS MANUAL           MU140045
                C          BY COLBY H. SPRINGER, MARCH 1970                     MU140050
                C          FOR THE WESTERN INTERSTATE COMMISSION FOR HIGHER EDUCATION  MU140055
                C          BOULDER, COLORADO  80302                             MU140060
                C                                                               MU140065
                C     PRODUCED UNDER U.S. OFFICE OF EDUCATION CONTRACT          MU140070
                C          NR OEC-0-8-980708-4533(010)                          MU140075
                C                                                               MU140080
                C                                                               MU140085
0002             COMMON COLLD1(12), PCCM1(8,8), ENRL1(5,9), ICLM1(8,10), DPI1(8),  MU140090
               1 IWLM1(8,10), BUFF11(71), DEGRD1(8,12), DISCD1(8,24),DEPTD1(8,24),MU140095
               2 DEPDS1(8,5), DISDS1(8,5), DEGDS1(8,5)                          MU140100
0003             COMMON COLLD2(12), PCCM2(8,8), ENRL2(5,9), ICLM2(8,10), DPI2(8),  MU140105
               1 IWLM2(8,10), BUFF12(71), DEGRD2(8,12), DISCD2(8,24),DEPTD2(8,24),MU140110
               2 DEPDS2(8,5), DISDS2(8,5), DEGDS2(8,5)                          MU140115
0004             COMMON COLLD3(12), PCCM3(8,8), ENRL3(5,9), ICLM3(8,10), DPI3(8),  MU140120
               1 IWLM3(8,10), BUFF13(71), DEGRD3(8,12), DISCD3(8,24),DEPTD3(8,24),MU140125
               2 DEPDS3(8,5), DISDS3(8,5), DEGDS3(8,5)                          MU140130
0005             COMMON COLLD4(12), PCCM4(8,8), ENRL4(5,9), ICLM4(8,10), DPI4(8),  MU140135
               1 IWLM4(8,10), BUFF14(71), DEGRD4(8,12), DISCD4(8,24),DEPTD4(8,24),MU140140
               2 DEPDS4(8,5), DISDS4(8,5), DEGDS4(8,5)                          MU140145
0006             COMMON COLLD5(12), PCCM5(8,8), ENRL5(5,9), ICLM5(8,10), DPI5(8),  MU140150
               1 IWLM5(8,10), BUFF15(71), DEGRD5(8,12), DISCD5(8,24),DEPTD5(8,24),MU140155
               2 DEPDS5(8,5), DISDS5(8,5), DEGDS5(8,5)                          MU140160
0007             COMMON J1, J2, J3, J4, J5, YY, MM, DD                          MU140165
0008             REAL MM                                                        MU140170
0009             REAL ICLM1,ICLM2,ICLM3,ICLM4,ICLM5,IWLM1,IWLM2,IWLM3,IWLM4,IWLM5  MU140175
                C     REPORT 6 GIVES THE DEGREE COSTS BROKEN DOWN INTO CENTRAL ADMINISTRMU140180
                C     LIBRARY, PHYSICAL PLANT,AND DEPARTMENTAL COSTS,GIVING THE TOTALS. MU140185
                C                                                               MU140190
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            C     INITIALIZE THE TOTALS AND LINE COUNT TO 0                                    MU140195
 0010               TOTAL1=0.                                                                  MU140200
 0011               TOTAL2=0.                                                                  MU140205
 0012               TOTAL3=0                                                                   MU140210
 0013               TOTAL4=0.                                                                  MU140215
 0014               TOTAL5=0.                                                                  MU140220
 0015               LKNT=0                                                                     MU140225
            C     PRINTS THE REPORT TITLE                                                      MU140230
 0016               WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                                     MU140235
 0017          1    FORMAT (1H1,  'NAME - ',5A4,26X,26HMICRO-U OUTPUT REPORT VIII/53X,MU140240
                   128HDEGREE PROGRAM BUDGET REPORT / 1X,A2,'/',A2,'/',A2,48X,                 MU140245
                   2'BY EXPENDITURE TYPE')                                                     MU140250
            C     PRINTS YEARS FOR DATA                                                        MU140255
 0018               WRITE(3,2)J1,J2,J3,J4,J5                                                   MU140260
 0019          2    FORMAT (/33X,5(I4,11X)/)                                                   MU140265
            C     LOOP TO ALLOW FOR UP TO 8 DEGREE PROGRAMS                                    MU140270
 0020               DO 10 I=1,8                                                                MU140275
            C     IF THE DEGREE COSTS FOR ALL 5 YEARS #0 THEN THERE IS NO DEGREE ANDMU140280
            C     IS PRINTED.                                                                  MU140285
 0021               IF(DEGRD1(I,3).EQ.0.0.AND.DEGRD2(I,3).EQ.0.0.AND.DEGRD3(I,3).EQ.0.MU140290
                   10.AND.DEGRD4(I,3).EQ.0.0.AND.DEGRD5(I,3).EQ.0.0) GO TO 10                  MU140295
            C     PRINT THE DEGREE DISCRIPTION                                                 MU140300
 0022               WRITE(3,3) (DEGDS5(I,J),J=1,5)                                             MU140305
 0023          3 FORMAT(//5X,5A4)                                                              MU140310
            C     DEPARTMENTAL COSTS - DEGRD                                                   MU140315
 0024               WRITE(3,4)DEGRD1(I,4),DEGRD2(I,4),DEGRD3(I,4),DEGRD4(I,4),                 MU140320
                   1DEGRD5(I,4)                                                                MU140325
 0025          4 FORMAT(8X,18HDEPARTMENTAL COSTS,4X,    5(F10.0,5X))                          MU140330
            C     LIBRARY COSTS - DEGRD                                                        MU140335
 0026               WRITE(3,5)DEGRD1(I,7),DEGRD2(I,7),DEGRD3(I,7),DEGRD4(I,7),                 MU140340
                   1DEGRD5(I,7)                                                                MU140345
 0027          5 FORMAT(8X,7HLIBRARY,15X,5(F10.0,5X))                                          MU140350
            C     CENTRAL ADMINISTRATION COSTS - DEGRD                                         MU140355
 0028               WRITE(3,7)DEGRD1(I,5),DEGRD2(I,5),DEGRD3(I,5),DEGRD4(I,5),                 MU140360
                   1DEGRD5(I,5)                                                                MU140365
 0029          7 FORMAT(8X,22HCENTRAL ADMINISTRATION,   5(F10.0,5X))                           MU140370
            C     PHYSICAL PLANT - DEGRD                                                       MU140375
 0030               WRITE(3,11) DEGRD1(I,6),DEGRD2(I,6),DEGRD3(I,6),DEGRD4(I,6),               MU140380
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                 1DEGRD5(I,6)                                                    MU140385
0031          11 FORMAT(8X,14HPHYSICAL PLANT,8X,5(F10.0,5X))                     MU140390
0032             WRITE(3,8)                                                      MU140395
0033           8 FORMAT(30X,5(10(1H-),5X))                                       MU140400
0034             WRITE(3,9)DEGRD1(I,3),DEGRD2(I,3),DEGRD3(I,3),DEGRD4(I,3),      MU140405
                 1DEGRD5(I,3)                                                    MU140410
0035           9 FORMAT (30X,5(F10.0,5X))                                        MU140415
           C     SUMM FOR THE  TOTALS OF THE COSTS FOR EACH YEAR                 MU140420
0036             TOTAL1=TOTAL1 + DEGRD1(I,3)                                     MU140425
0037             TOTAL2=TOTAL2 + DEGRD2(I,3)                                     MU140430
0038             TOTAL3=TOTAL3 + DEGRD3(I,3)                                     MU140435
0039             TOTAL4=TOTAL4 + DEGRD4(I,3)                                     MU140440
0040             TOTAL5=TOTAL5 + DEGRD5(I,3)                                     MU140445
           C     THERE ARE 9 LINES PRINTED IN THE LOOP                           MU140450
0041             LKNT=LKNT+9                                                     MU140455
           C     IF MORE THAN 36 LINES HAVE BEEN PRINTED THEN A NEW PAGE WILL STARTMU140460
           C     WITH THE TITLES                                                 MU140465
0042             IF(LKNT.LT.36) GO TO 10                                         MU140470
0043             WRITE (3,1) (BUFF11(K),K=2,6),MM,DD,YY                          MU140475
0044             WRITE(3,2)J1,J2,J3,J4,J5                                        MU140480
0045             LKNT=0                                                          MU140485
0046          10 CONTINUE                                                        MU140490
           C     PRINT THE TOTAL COSTS OF THE DEGREES                            MU140495
0047             WRITE(3,12) TOTAL1,TOTAL2,TOTAL3,TOTAL4,TOTAL5                  MU140500
0048          12 FORMAT (/ 5X,'TOTAL ALL DEPARTMENTS',4X,5(F10.0,5X))            MU140505
0049             RETURN                                                          MU140510
0050             END                                                             MU140515
```

COMMON BLOCK / / MAP SIZE 4B20

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
COLLD1	0	PCCM1	30	ENRL1	130	ICLM1	1E4	DPI1	324
IWLM1	344	BUFF11	484	DEGRD1	5A0	DISCD1	720	DEPTD1	A20
DEPDS1	D20	DISDS1	DC0	DEGDS1	E60	COLLD2	F00	PCCM2	F30
ENRL2	1030	ICLM2	10E4	DPI2	1224	IWLM2	1244	BUFF12	1384
DEGRD2	14A0	DISCD2	1620	DEPTD2	1920	DEPDS2	1C20	DISDS2	1CC0
DEGDS2	1D60	COLLD3	1E00	PCCM3	1E30	ENRL3	1F30	ICLM3	1FE4
DPI3	2124	IWLM3	2144	BUFF13	2284	DEGRD3	23A0	DISCD3	2520
DEPTD3	2820	DEPDS3	2B20	DISDS3	2BC0	DEGDS3	2C60	COLLD4	2D00
PCCM4	2D30	ENRL4	2E30	ICLM4	2EE4	DPI4	3024	IWLM4	3044
BUFF14	3184	DEGRD4	32A0	DISCD4	3420	DEPTD4	3720	DEPDS4	3A20
DISDS4	3AC0	DEGDS4	3B60	COLLD5	3C00	PCCM5	3C30	ENRL5	3D30
ICLM5	3DE4	DPI5	3F24	IWLM5	3F44	BUFF15	4084	DEGRD5	41A0
DISCD5	4320	DEPTD5	4620	DEPDS5	4920	DISDS5	49C0	DEGDS5	4A60
J1	4B00	J2	4B04	J3	4B08	J4	4B0C	J5	4B10
YY	4B14	MM	4B18	DD	4B1C				

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SCALAR MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
TOTAL1	C4	TOTAL2	C8	TOTAL3	CC	TOTAL4	D0	TOTAL5	D4
LKNT	D8	K	DC	I	E0	J	E4		

SUBPROGRAMS CALLED

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
IBCOM#	E8								

FORMAT STATEMENT MAP

SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION	SYMBOL	LOCATION
1	EC	2	163	3	170	4	17A	5	19C
7	1B3	11	1D7	8	1F5	9	204	12	210

TOTAL MEMORY REQUIREMENTS 00078C BYTES

HIGHEST SEVERITY LEVEL OF ERRORS FOR THIS MODULE WAS 0

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3. Weathersby, George, The Development and Applications of a University Cost Simulation Model, Office of Analytical Studies, University of California, Berkeley, California, June 1967.

4. Young, Michael E., Program Budgeting: An Applied Model (Master's Thesis), School of Business, San Fernando Valley State College, Northridge, California, January 1970.